PMC Modules

Data Sheets of TEWS' PMC Modules and Carrier

About TEWS TECHNOLOGIES

TEWS TECHNOLOGIES is a leading solutions provider of embedded I/O and CPU products based on open architecture standards such as PMC, IndustryPack® (IP), CompactPCI, standard PCI, VME, and AMC.

TEWS has more than 30 years of experience designing and building turn-key embedded interface solutions using the philosophy to listen and respond to our customers' needs.

Using this 'customer first' approach, TEWS has developed a large number of standard and custom products for applications in industrial control, telecommunication infrastructure, medical equipment, traffic control and aerospace/defense.

TEWS' line of embedded I/O solutions is available worldwide through a global network of distributors.

Quality Assurance / Warranty

TEWS operates three subsidiaries to meet global demand for pre and post sales support, reduced development time, long term product availability, and complete product lifecycle management.

TEWS is committed to continuously improving the quality of our products and services. As a reflection of our commitment to quality, TEWS has implemented and received ISO9001:2008 certification.

All TEWS' products feature a five-year limited warranty.

RoHS / WEEE Compliance

TEWS TECHNOLOGIES believes in conducting business in a manner that respects the environment and consequently has embraced the RoHS regulations of the European Community.

TEWS now produces RoHS-compliant versions of our products, provided all required components are available RoHS-compliant. Products which do not have RoHS-compliant components available may be redesigned to meet the regulations on a case-by-case basis. Redesigned product will match the original product in form, fit and/or function whenever possible.

Non-compliant products will continue to be available for all applications which are exempt from the RoHS directives and have a continuing requirement for leaded solder.

More information regarding RoHS compliance is available on the specific product pages at www.tews.com.

Software support

Software support is a critical and defining component of the TEWS' I/O product offering. Our modular hardware designs are coupled with extensive software drivers and support for most major real-time and server operating systems such as VxWorks, Windows XP/XPE/2000, Integrity, Linux, LynxOS, and QNX. Supported CPU architectures are Intel, PowerPC and 68k (for IndustryPack only).

For IndustryPack carriers and modules, TEWS has developed a layered driver concept that includes both a carrier driver layer and an IP module driver layer.

All TEWS' IndustryPack carriers are supported directly by the carrier driver, and a generic driver is included for integration of third party products.

A key element of our software is our support staff. All TEWS' support engineers are professionally trained to ensure in-depth support for software drivers and integration.

PMC Modules

PMC is a mezzanine standard largely based on the PCI standard. The electrical and logical layers are the same as those defined by the PCI standard. With a module size of 149 mm x 74 mm, a 6U VME or cPCI carrier board can hold two PMC modules.

If you need high performance and/or intelligent I/O, choose a PMC-module. TEWS TECHNOLOGIES PMC modules plug into VME, CompactPCI and other carrier cards to perform high-speed and high-resolution A/D, D/A, digital I/O, motion control, FPGA and serial communication functions amongst others.

Many of our new PMC modules are based on upgraded technologies and circuit designs from our IndustryPack I/O module line, which are well proven in several hundred OEM installations. Note that nearly all TEWS modules are galvanically isolated to protect your system, and most have front panel high-density connectors.

If you wish to inquire about custom PMC designs, please contact TEWS directly at our offices in Germany or the United States. TEWS works closely with OEM and government customers to deliver accelerated time to market, long-term product availability and comprehensive product lifecycle management -- from the design stage through manufacturing, testing and beyond to post-sales support.

In addition to our well known PMC modules, we offer a complete line of PCI, Compact PCI, and numerous IndustryPack modules off-the-shelf.

All TEWS modules feature a five-year limited warranty, and many are offered standard in extended temperature (-40°C to +85°C). Software drivers for VxWorks, LynxOS, LiNUX, QNX, Integrity and Windows XP/XPE/2000 are available.

For more information go to www.tews.com.

Compact PCI Modules

As part of our continued commitment to the embedded I/O market, TEWS TECHNOLOGIES has begun development of I/O solutions based on the CompactPCI standard.

The modules are designed for data communications, LAN/WAN networking, military communications, traffic control, simulation, and telecommunication applications. Our CompactPCI product line will offer comparable functionality to our PMC module product line.

If you wish to inquire about converting the functionality of any of our PMC modules

to a CompactPCI design, please contact TEWS directly at our offices in Germany or the United States.

In addition to our well known cPCI modules, we offer a complete line of PMC, and numerous IndustryPack® modules off-the-shelf.

All TEWS modules feature a five-year limited warranty, and many are offered standard in extended temperature (-40°C to +85°C). Software drivers for VxWorks, LynxOS, LiNUX, QNX, Integrity and Windows XP/XPE/2000 are available. For more information go to www.tews.com.
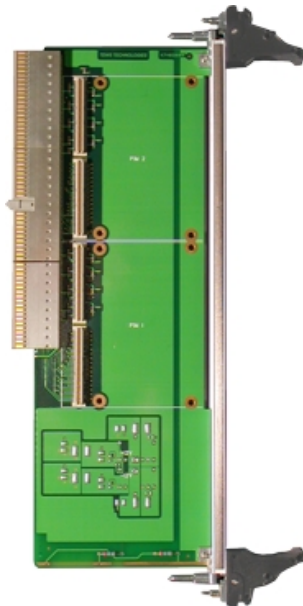
TCP020-TM   PIM Carrier Transition Module for 6U cPCI

Application Information

The TCP020-TM is a 6U PIM Carrier Transition Module to be used with 6U cPCI PMC carrier like TEWS' TCP260. It provides easy access to the PMC I/O lines of cPCI PMC carrier with back I/O via J3 and J5.
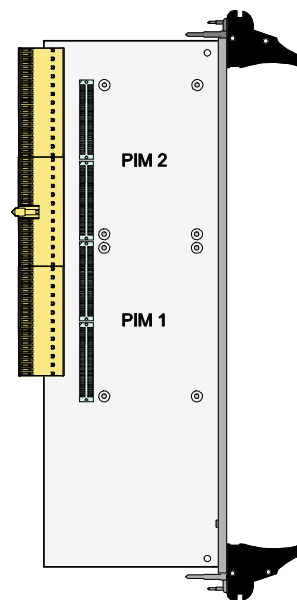
The PIM Carrier TCP020-TM distributes all I/O lines of both PMCs from the cPCI RJ3 and RJ5 connector to two PIM modules.

The operating temperature range is -40°C to +85°C.

Technical Information

○ Form Factor: cPCI 6U Rear Transition Module (233 mm x 80 mm)
○ I/O Routing:
  ○ PMC I/O mapping via RJ3 and RJ5
  ○ I/O lines are accessible via two PIM modules
○ EMI front panel
○ Operating temperature: -40°C to +85°C

Order Information

RoHS Compliant

TCP020-TM-10R   Transition Module for 6U cPCI PMC carrier with Back I/O via J3 and J5

None RoHS Compliant

TCP020-TM-10   None RoHS compliant version of TCP020-TM-10R

Documentation

TCP020-TM-DOC   User Manual

Related Products

TPIM001	PIM I/O Module with HD50 SCSI-2 type connector
TPIM002	PIM I/O Module with HD68 SCSI-3 type connector
TPIM003	PIM I/O Module with HD68 SCSI-3 type connector
TPIM004	PIM I/O Module with 4 RJ45 connectors
TPIM005	PIM I/O Module with HD68 SCSI-3 type connector

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TCP021-TM   PIM Carrier Transition Module for 6U cPCI

Application Information

The TCP021-TM is a 6U PIM Carrier Transition Module to be used with 6U cPCI PMC carrier like TEWS' TCP261. It provides easy access to the PMC I/O lines of cPCI PMC carrier with back I/O via J3 and J4.

Technical Information

❍ Form Factor: cPCI 6U Rear Transition Module (233 mm x 80 mm)
❍ I/O Routing:
  ❍ PMC I/O mapping via RJ3 and RJ4
  ❍ I/O lines are accessible via two PIM modules
❍ EMI front panel
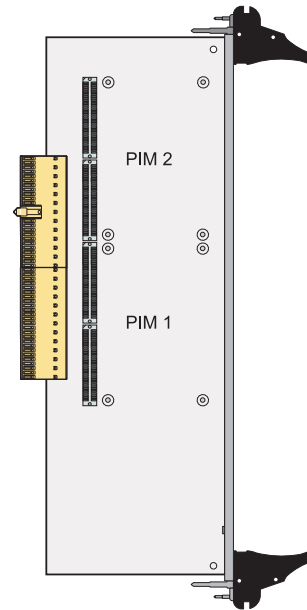❍ Operating temperature: -40°C to +85°C

The PIM Carrier TCP021-TM distributes all I/O lines of both PMCs from the cPCI RJ3 and RJ4 connector to two PIM modules.

The operating temperature range is -40°C to +85°C.

Order Information

RoHS Compliant

TCP021-TM-10R Transition Module for 6U cPCI PMC carrier with Back I/O via J3 and J4

None RoHS Compliant

TCP021-TM-10 None RoHS compliant version of TCP021-TM-10R

Documentation

TCP021-TM-DOC User Manual

Related Products

TPIM001 PIM I/O Module with HD50 SCSI-2 type connector

TPIM002 PIM I/O Module with HD68 SCSI-3 type connector

TPIM003 PIM I/O Module with HD68 SCSI-3 type connector

TPIM004 PIM I/O Module with 4 RJ45 connectors

TPIM005 PIM I/O Module with HD68 SCSI-3 type connector

TCP030-TM   Transition Module for 3U cPCI PMC Carrier

Application Information

The TCP030-TM is a 3U Transition Module to be used with 3U cPCI PMC carrier like TEWS' TCP270-11R/-11. It provides easy access to the PMC I/O lines of cPCI PMC carrier with back I/O.
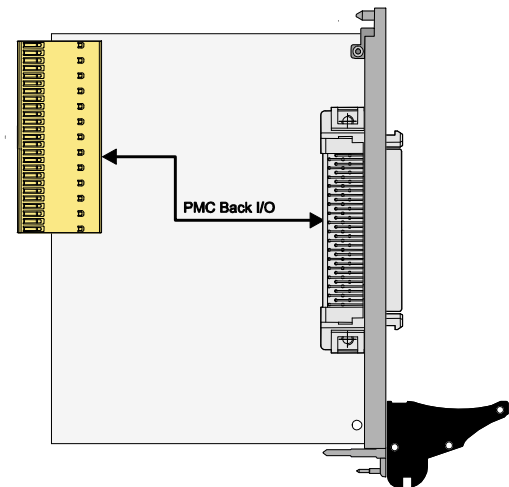
All 64 PMC I/O lines are distributed from the cPCI RJ2 connector to a 68 pin SCSI-3 type connector located in the front panel. The pin assignment corresponds to the PICMG 2.3 R1.0 PMC on CompactPCI signal mapping.

The operating temperature range is -40°C to +85°C.

Technical Information

- ❍ Form Factor: cPCI 3U Rear Transition Module (100 mm x 80 mm)
- ❍ I/O Routing:
  - ❍ I/O lines are accessible via HD68 SCSI-3 type connector
- ❍ Front panel
- ❍ Operating temperature: -40°C to +85°C

PMC Back I/O

Order Information

TCP030-TM-10R   Transition Module for 3U cPCI PMC carrier, I/O lines accessible via HD68 SCSI-3 type connector, front panel

TCP030-TM-10   None RoHS compliant version of TCP030-TM-10R

TCP030-TM-DOC   User Manual

TCP040-TM   PIM Carrier Transition Module for 3U cPCI

Application Information

The TCP040-TM is a 3U PIM Carrier Transition Module to be used with 3U CompactPCI PMC carrier like TEWS' TCP270 or 3U CompactPCI modules with back I/O. It provides easy access to the PMC I/O lines of 3HE CompactPCI PMC carriers and most TEWS CompactPCI Modules with back I/O.
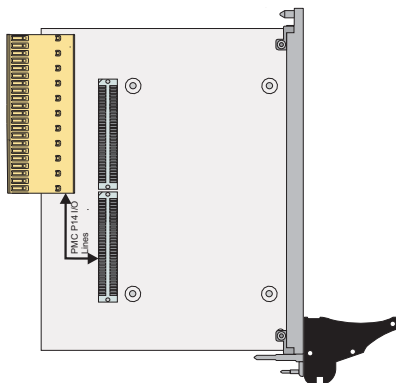
It distributes all I/O lines of one PMC from the cPCI RJ2 connector to a PIM module.

The operating temperature range is -40°C to +85°C.

Technical Information

- ❍ Form Factor: cPCI 3U Rear Transition Module (100 mm x 80 mm)
- ❍ I/O Routing:
  - ❍ PMC I/O mapping via RJ2
  - ❍ I/O lines are accessible via the PIM modules
- ❍ EMI front panel
- ❍ Operating temperature: -40°C to +85°C

Order Information

RoHS Compliant
TCP040-TM-10R PIM Carrier Transition Module for 3U cPCI PMC Carrier with back I/O via J2

None RoHS Compliant
TCP040-TM-10 None RoHS compliant version of TCP040-TM-10R

Documentation
TCP040-TM-DOC User Manual

Related Products
TPIM001 PIM I/O Module with HD50 SCSI-2 type connector
TPIM002 PIM I/O Module with HD68 SCSI-3 type connector
TPIM003 PIM I/O Module with HD68 SCSI-3 type connector
TPIM004 PIM I/O Module with 4 RJ45 connectors
TPIM005 PIM I/O Module with HD68 SCSI-3 type connector

VMEbus Modules

VMEbus technology is well-established for industrial applications and automation technology with high-security standards, infinite processor performance requirements, and real-time capability. A wide range of technical and commercial aspects have contributed to the unique success of the VMEbus concept. Among these aspects is the international open standard nature of VME, a mechanical structure based on classic 19-inch rackmount concepts, a choice of 3U and 6U Eurocard sizing, a wide range of COTS (commercial off-the-shelf) products, a wide vendor base, and continued improvement to the VME standard.

After more than two decades on the market, VMEbus has become a proven and reliable industry standard for many industrial, aerospace/defense, and communications applications.

Since 1985, TEWS TECHNOLOGIES has offered VME products. At that time, TEWS recognized the need for a standard I/O product offering, and with Motorola's backing of the bus architecture, VME was the natural choice. Our experience in the modular I/O market grew from our work with VME. In

addition to our well known modular I/O solutions, we offer VME IndustryPack carriers, VME PowerPC CPU designs, and general VME-based industrial I/O solutions. TEWS is committed to long-term support of the VMEbus, and will continue to announce VME products in the near future.

If you wish to inquire about custom VME designs, please contact TEWS directly at our offices in Germany or the United States. TEWS works closely with OEM and government customers to deliver accelerated time to market, long-term product availability and comprehensive product lifecycle management -- from the design stage through manufacturing, testing and beyond to post-sales support.

In addition to our well known IP modules, we offer a complete line of PCI, Compact PCI, and numerous PMC modules off-the-shelf.

All TEWS modules feature a five-year limited warranty, and many are offered standard in extended temperature (-40°C to +85°C). Software drivers for VxWorks, LynxOS, LiNUX, QNX, Integrity and Windows XP/XPE/2000 are available.
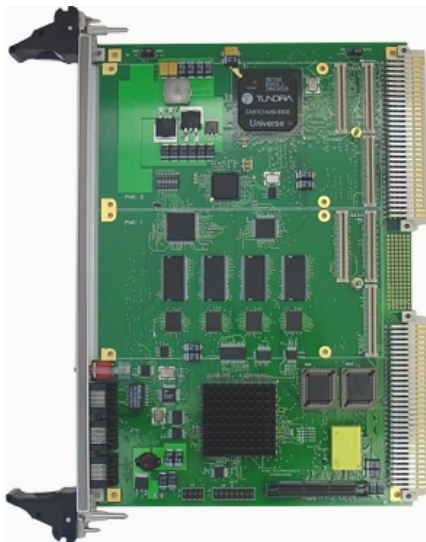
For more information go to www.tews.com.

TVME8400 PowerPC based CPU Board with two PMC Slots

Application Information

The TVME8400 VMEbus CPU board is based on the high integrated MPC8245 Power PC microprocessor with a G2 MPC603e CPU core, a powerful Memory Controller and PCI interface.

The TVME8400 provides two PMC slots (32 bit, 33 MHz PCI) with VME64x P2 backplane I/O, Fast Ethernet, FLASH memory, System Memory, NVRAM/RTC and a PCI Expansion Connector (32 bit, 33 MHz PCI).
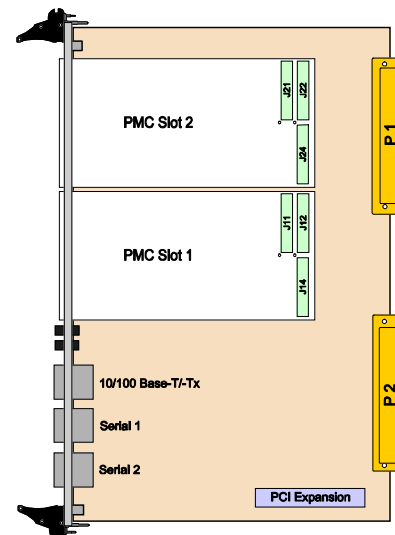

The combination of the MPC8245 processor and the PMC slots plus the PCI Expansion capability provides a powerful CPU and a modular I/O solution for applications in process control, telecommunication, medical systems and traffic control.
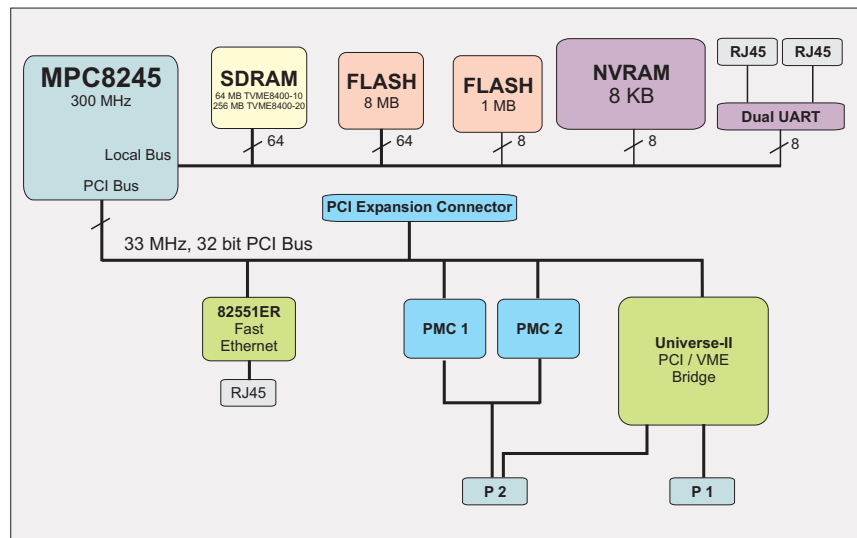
Software support for the TVME8400 CPU board is available for VxWorks, Linux, and LynxOS. A PMON Bug Monitor is installed on the TVME8400.

For First-Time-Buyers the Engineering Documentation TVME8400-ED is recommended. The Engineering Documentation includes user manual, schematic, assembly drawing and data sheets.

Technical Information

- MPC8245 CPU: 300 MHz PowerPC G2 Core, 16 KB / 16 KB L1-Cache, four programmable timers
- TVME8400-10x: 64 MB SDRAM (64 bit wide) TVME8400-20x: 256 MB SDRAM (64 bit wide)
- Two 32-pin PLCC sockets for up to 1 MB firmware FLASH memory
- 8 MB FLASH memory (64 bit wide)
- Two PMC Slots (32 bit, 33 MHz PCI) with VME64x P2 I/O
- PCI Expansion Card Connector (32 bit, 33 MHz PCI, e.g. for using TVME230 IP Expansion Card or Motorola PMC-Span)
- Fast Ethernet interface (32 bit PCI DMA)
- 8 KB NVRAM/RTC (exchangeable battery)
- Two asynchronous RS232 ports
- On board debug monitor
- A32/D32/BLT64 VME bus Master/Slave interface with system controller function, high performance DMA, supports VMEbus D64 and 32 bit PCI local bus memory burst, 4-Level requester, 7-Level interrupter and 7-Level VME bus interrupt handler
- Operating temperature range: TVME8400-10x / -20x: 0°C to 55°C (forced air cooling) TVME8400-10x-ET / -20x-ET: -40°C to +85°C (forced air cooling)

10/2009

Block Diagram TVME8400

Order Information

RoHS Compliant

TVME8400-10R   MPC8245-300 MHz, 64 MB SDRAM, 1 + 8 MB Flash, Fast Ethernet, 2 PMC Slots with VME64x P2 I/O, IEEE1101 Handles, Operating temperature range: 0°C to 55°C (forced air cooling)

TVME8400-20R   MPC8245-300 MHz, 256 MB SDRAM, 1 + 8 MB Flash, Fast Ethernet, 2 PMC Slots with VME64x P2 I/O, IEEE1101 Handles, Operating temperature range: 0°C to 55°C (forced air cooling)

TVME8400-10R-ET   Same as TVME8400-10R but operating temperature range -40°C to +85°C (forced air cooling)

TVME8400-20R-ET   Same as TVME8400-20R but operating temperature range -40°C to +85°C (forced air cooling)

None RoHS Compliant

TVME8400-10   None RoHS compliant version of TVME8400-10R
TVME8400-10-ET   None RoHS compliant version of TVME8400-10R-ET
TVME8400-20   None RoHS compliant version of TVME8400-20R
TVME8400-20-ET   None RoHS compliant version of TVME8400-20R-ET

Documentation

TVME8400-DOC   User Manual, includes documentation for PMON Bug Monitor
TVME8400-ED   Engineering Documentation (User Manual, Schematic, Assembly Drawing, Device Documentation)

Software

TVME8400-SW-40   VxWorks Board Support Package
TVME8400-SW-70   LynxOS Board Support Package
TBSP001-SW-80   Linux Board Support Package

For other operating systems please contact TEWS.

Related Products

TVME020-TM   2 Slot PIM Carrier 6U VME64x Rear I/O Transition Module
TVME230   PCI Expansion Card for 4 IndustryPacks, IEEE1101 Handles or Standard Handles

TVME020-TM VME64x Rear I/O PIM Carrier

Application Information

The TVME020-TM is a VME64x Rear I/O 2 Slot PIM Carrier Transition Module to be used with 6U VME64x PMC carrier boards.

The TVME020-TM conforms to the ANSI/VITA 35-2000 PMC to VME-P2/VME64x-P2 I/O mapping.

According to the ANSI/VITA 35-2000 PMC to VME-P2/VME64x-P2 I/O mapping, there are 64 I/O signals for PMC1 available at VME-P2/VME64x-P2 connector rows a + c, and 46 I/O signals for PMC2 available at VME64x-P2 connector rows z + d.
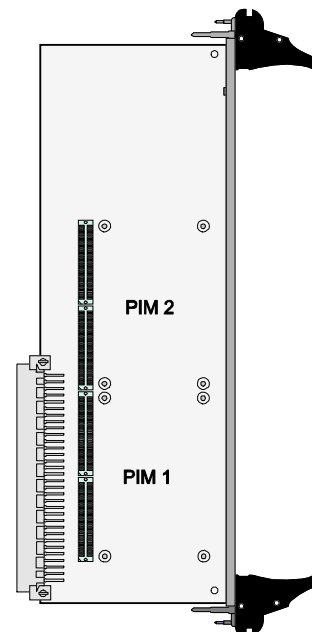
With the TVME020-TM all the 64 PMC1 I/O lines are available at PIM slot 1, and all the 46 PMC2 I/O lines are available at PIM slot 2.

The operating temperature range is -40°C to +85°C.

Technical Information

❍ Form Factor: 6U VME64x Rear I/O Transition Module (233 mm x 80 mm)
❍ 2 PIM Slots
❍ ANSI/VITA 35-2000 PMC to VME-P2/VME64x-P2 I/O mapping supported
❍ PIM slots:
  • 64 PMC1 I/O lines on PIM slot 1
  • 46 PMC2 I/O lines on PIM slot 2
  • +5V and +3.3V power supply at the PIM slots
❍ EMI front panel
❍ Operating temperature: -40°C to +85°C

Order Information

RoHS Compliant
TVME020-TM-10R   VME64x Rear I/O 2 Slot PIM Carrier

None RoHS Compliant
TVME020-TM-10   None RoHS compliant version of TVME020-TM-10R

Documentation
TVME020-TM-DOC   User Manual

Related Product
TPIM001   PIM I/O Module with HD50 SCSI-2 type connector

TPIM002   PIM I/O Module with HD68 SCSI-3 type connector

TPIM003   PIM I/O Module with HD68 SCSI-3 type connector

TPIM004   PIM I/O Module with 4 RJ45 connectors

TPIM005   PIM I/O Module with HD68 SCSI-3 type connector

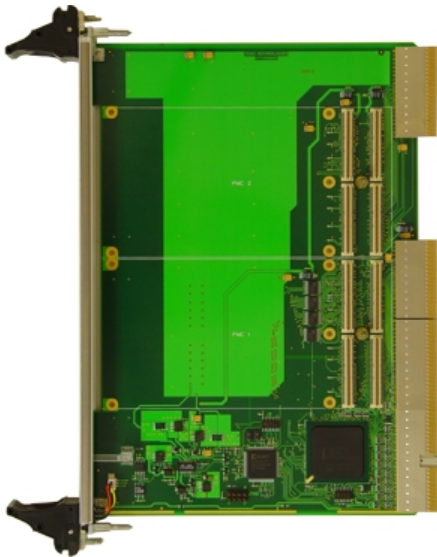# TCP260   Dual PMC Carrier for 6U CompactPCI (J3/J5 I/O)

Application Information

The TCP260 is a standard 6U CompactPCI carrier that provides front I/O and rear I/O for up to two single width PMC modules.

The transparent PCI to PIC Bridge is used as the PCI bridging device between the primary CompactPCI bus and the on board secondary PCI bus where the two PMC slots reside.
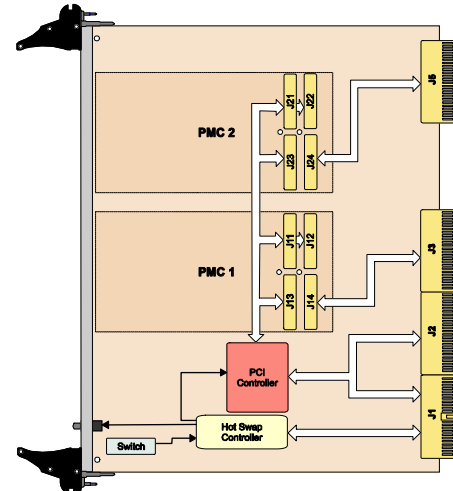
Supported PCI bus data widths are 32 bit and 64 bit. Supported PCI bus frequencies are 33 MHz and 66 MHz.

The TCP260 supports standard PMC front I/O and CompactPCI rear I/O. The PMC slot 1 I/O lines are connected directly to the CompactPCI connector J3. The PMC slot 2 I/O lines are connected directly to the CompactPCI connector J5.

Technical Information

- Standard 6U 32/64 bit CompactPCI module conforming to PICMG 2.0 R3.0
- PCI 2.2 compliant interface
- Two PMC sites conforming to PMC standard
- Board size: 160 mm x 233.35 mm
- Front panel I/O
- CompactPCI rear I/O : Connector J3 and J5
- PCI Interface : 33 / 66 MHz; 32 / 64 bit
- Intel PCI-to-PCI bridge 21154(TCP260-10/-11) or Pericom PI7C8154B (TCP260-10-ET/-11-ET)
- CompactPCI hot swap conforming to PICMG 2.1 R2.0
- 5V and 3.3V signaling
- Temperature range: 0°C to +70°C (TCP260-10/-11) and -40°C to +85°C (TCP260-10-ET/-11-ET)

The TCP260 also provides hot swapping capability. The TCP260 on board hot swap controller controls the installation and reinstallation process of the TCP260 without powering down the CompactPCI system.

The TCP260 carrier complies with the PICMG 2.0 Revision 3.0 CompactPCI specification.

The TCP260 is available in extended temperature range as TCP260-10-ET and TCP260-11-ET.

For First-Time-Buyers the Engineering Documentation TCP260-ED is recommended. The Engineering Documentation includes TCP260-DOC, schematics and data sheets of the TCP260.

Order Information

RoHS Compliant

TCP260-10R   Dual PMC Carrier for 6U CompactPCI
5V PMC V/IO voltage

TCP260-10R-ET Same as TCP260-10R but Extended
Temperature Range

TCP260-11R   Dual PMC Carrier for 6U CompactPCI
3.3V PMC V/IO voltage

TCP260-11R-ET Same as TCP260-11R but Extended
Temperature Range

None RoHS Compliant

TCP260-10   None RoHS compliant version of
TCP260-10R

TCP260-10-ET   None RoHS compliant version of
TCP260-10R-ET

TCP260-11   None RoHS compliant version of
TCP260-11R

TCP260-11-ET   None RoHS compliant version of
TCP260-11R-ET

Documentation

TCP260-DOC   User Manual

TCP260-ED   Engineering Documentation, includes
TCP260-DOC

Related Products

TCP020-TM   Transition Module for 6U cPCI PMC
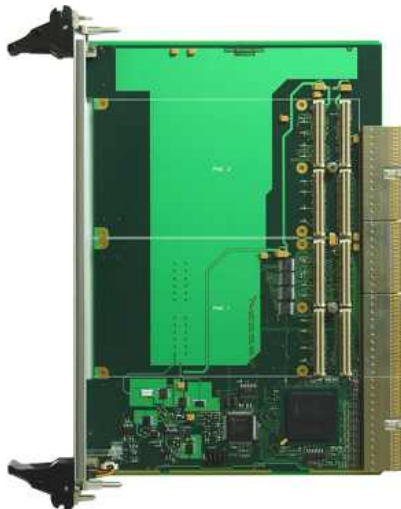carrier with Back I/O via J3 and J5

TCP261   Dual PMC Carrier for 6U CompactPCI (J3/J4 I/O)

Application Information

The TCP261 is a standard 6U CompactPCI carrier that provides front I/O and rear I/O for up to two single width PMC modules.

32 bit and 64 bit PCI accesses are supported on PCI bus with PCI frequency 33 MHz and also 66 MHz. The transparent Intel PCI-to-PCI Bridge 21154 provides the real connection between primary CompactPCI bus and the two secondary PMC slots. The bridge controls all PCI accesses, data bus width and in each case the frequency for a PMC access to one of the connected modules.

The TCP261 supports standard PMC front I/O and for both PMC slots CompactPCI rear I/O. The PMC slot 2 is connected directly to the CompactPCI connector J4 and J3. The PMC slot 1 is connected directly to the CompactPCI connector J3.
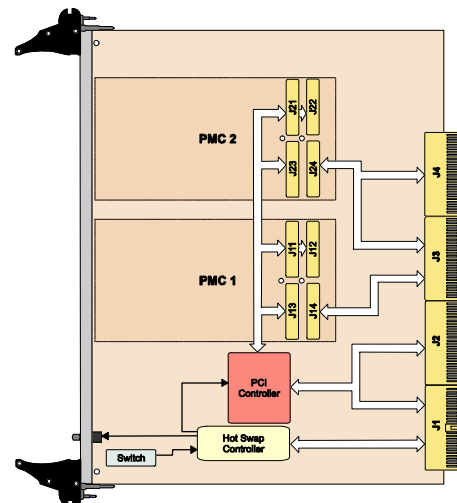

Capability of hot swapping is realized by a hot swap controller for the TCP261. The hot swap controller and the PCI-to-PCI Bridge are controlling the installation and reinstallation process of the TCP261 without power down the system.

The TCP261 carrier complies with the PICMG 2.0 Revision 3.0 CompactPCI specification.

For First-Time-Buyers the Engineering Documentation TCP261-ED is recommended. The Engineering Documentation includes TCP261-DOC, schematics and data sheets of the TCP261.

Technical Information

- Standard 6U 32/64 bit CompactPCI module conforming to PICMG 2.0 R3.0
- PCI 2.2 compliant interface
- Two PMC sites conforming to PMC standard
- Board size: 160 mm x 233.35 mm
- Front panel I/O
- CompactPCI rear I/O : Connector J3 and J4 conforming to PICMG 2.3 R1.0
- PCI Interface : 33/66 MHz; 32/64 bit
- Intel PCI-to-PCI bridge 21154
- CompactPCI hot swap conforming to PICMG 2.1 R2.0
- 5V and 3.3V signaling
- Operating temperature 0°C to +70°C

Order Information

RoHS Compliant

TCP261-10R   Dual PMC Carrier for 6U CompactPCI

TCP261-11R   Dual PMC Carrier for 6U CompactPCI 3.3V PMC V/IO voltage

None RoHS Compliant

TCP261-10   None RoHS compliant version of TCP261-10R

TCP261-11   None RoHS compliant version of TCP261-11R

Documentation

TCP261-DOC   User Manual

TCP261-ED   Engineering Documentation, includes TCP261-DOC

Related Products

TCP021-TM   Transition Module for 6U cPCI PMC carrier with Back I/O via J3 and J4

TCP270   PMC Carrier for 3U CompactPCI

Application Information

The TCP270 is a standard 3U CompactPCI carrier that provides front I/O and rear I/O for a single width PMC module. This PMC to 3U CompactPCI adapter is used to build modular, flexible and cost effective I/O solutions with PMC devices in CompactPCI systems.
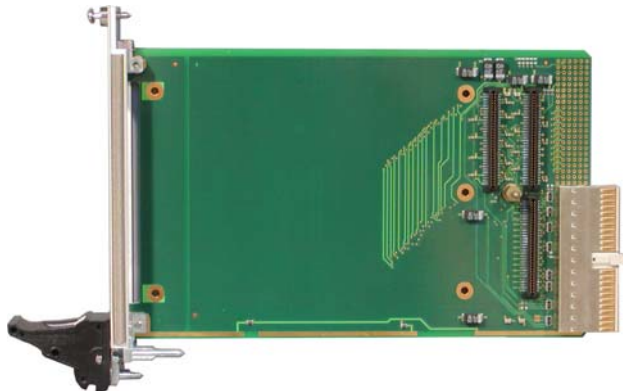
32 bit / 33 MHz accesses are supported on the PCI bus. The TCP270 is used as a mechanical adaptor to connect a standard PMC module in 3U CompactPCI systems.

The TCP270 supports PMC front I/O and optional CompactPCI rear I/O at CompactPCI connector J2/P2. The pin assignment corresponds to the PICMG 2.3 R1.0 PMC on CompactPCI signal mapping.

The use of PMC I/O on the J2/P2 connector (TCP270-11) precludes the use of 64 bit CompactPCI backplanes.

The TCP270 carrier complies with the PICMG 2.0 Revision 3.0 CompactPCI specification.
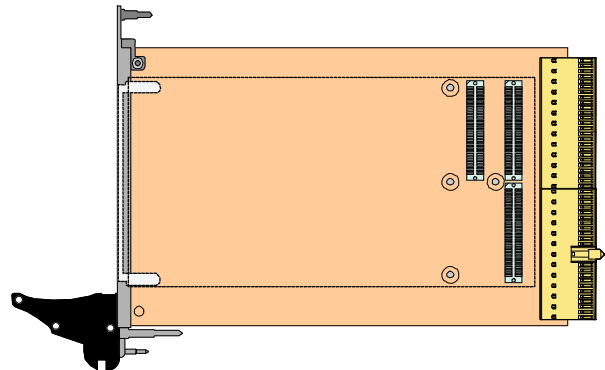
Operating temperature range is -40°C to +85°C.

For First-Time-Buyers the Engineering Documentation TCP270-ED is recommended. The Engineering Documentation includes TCP270-DOC, schematics and data sheets of the TCP270.

Technical Information

- ❍ 3U 32 bit / 33 MHz CompactPCI module conforming to PICMG 2.0 Rev 3.0
    - ❍ PCI 2.2 compliant interface
    - ❍ Board size: 160 mm x 100 mm
    - ❍ PCI Interface: 33 MHz; 32 bit
    - ❍ 5V and 3.3V PCI I/O signaling voltage possible
- ❍ One PMC site conforming to PMC standard
- ❍ Front panel I/O
- ❍ CompactPCI rear I/O: Connector J2 optional
- ❍ Operating temperature -40°C to +85°C

Order Information

RoHS Compliant

TCP270-10R	Single PMC Carrier for 3U CompactPCI, Front I/O
TCP270-11R	Single PMC Carrier for 3U CompactPCI, Front I/O and J2 Rear I/O

None RoHS Compliant

TCP270-10	None RoHS compliant version of TCP270-10R
TCP270-11	None RoHS compliant version of TCP270-11R

Documentation

TCP270-DOC	User Manual
TCP270-ED	Engineering Documentation, includes TCP270-DOC

Related Products

TCP001-FP	6U front panel extension for 3U cPCI boards
TCP030-TM	Transition Module for TCP270-11, I/O lines accessible via HD68 SCSI-3 type connector, front panel
TCP040-TM	PIM Carrier Transition Module for TCP270-11, I/O lines accessible via HD68 SCSI-3 type connector, front panel

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The Embedded I/O Company

TPIM001 PIM I/O Module with 50 pin Connector

Application Information

The TPIM001 is a standard single-width PIM I/O module to be used with any PIM carrier. It offers easy access to the PMC back I/O lines of PMC carrier with back I/O.

The TPIM001 distributes the lower 50 I/O lines of the PMC to a standard 50 pin SCSI-2 type connector located in the EMI front panel.

The operating temperature range is -40°C to +85°C.

Figure: TPIM001-10

Technical Information

○ Standard single-width PIM I/O Module
○ Board size: 69 mm x 74 mm
○ I/O lines 1 to 50 are routed to a HD50 SCSI-2 type connector in the front panel
○ EMI Front Panel
○ Operating Temperature: -40°C to +85°C

Order Information

TPIM001-10R   PIM I/O Module with HD50 SCSI-2 type connector

TPIM001-10   None RoHS compliant version of TPIM001-10R

TPIM001-DOC   User Manual

TEWS
T E C H N O L O G I E S

The Embedded I/O Company

TPIM002   PIM I/O Module with 68 pin Connector

Application Information

The TPIM002 is a standard single-width PIM I/O module to be used with any PIM carrier. It offers easy access to the PMC back I/O lines of PMC carrier with back I/O.

The TPIM002 distributes all PMC back I/O lines to a 68 pin SCSI-3 type connector located in the EMI front panel.
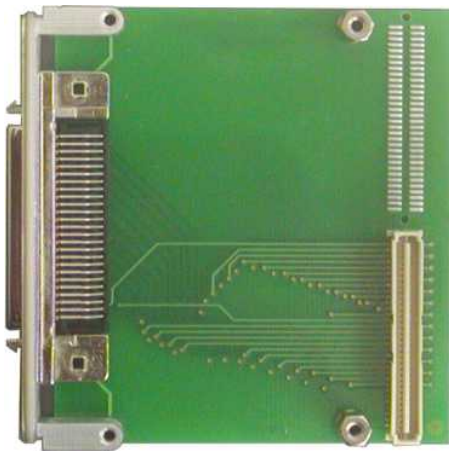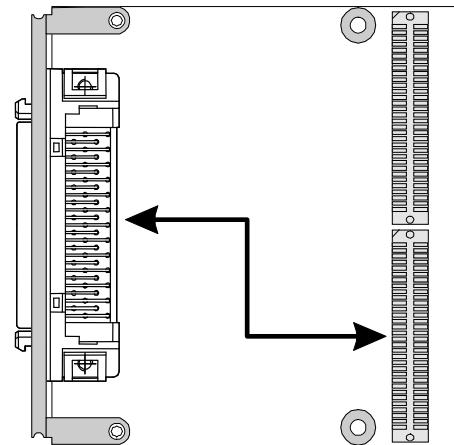
The operating temperature range is -40°C to +85°C.

Figure: TPIM002-10

Technical Information

❍ Standard single-width PIM I/O Module
❍ Board size: 69 mm x 74 mm
❍ I/O lines are routed to a HD68 SCSI-3 type connector in the front panel
❍ EMI Front Panel
❍ Operating Temperature: -40°C to +85°C

Order Information

TPIM002-10R   PIM I/O Module with HD68 SCSI-3 type connector

TPIM002-10   None RoHS compliant version of TPIM002-10R

TPIM002-DOC   User Manual

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TPIM003   PIM I/O Module with 68 pin Connector

Application Information

The TPIM003 is a standard single-width PIM I/O module to be used with any PIM Carrier like TEWS' TCP020-TM, TVME020-TM or others. It offers easy access to the PMC back I/O lines of PMC carriers with back I/O like TEWS' TCP260 or TVME8400.

The TPIM003 distributes all 64 PMC back I/O lines to a 68 pin SCSI-3 type connector located in the EMI front panel. Additional GND pins are inserted by solder jumpers at pin 9, 26, 43 and 60 of the 68 pin SCSI-3 type connector. The routing and I/O signal mapping of the TPIM003 is optimized for differential pair routing.

The TPIM003 recreates the PMC front I/O signal mapping in its 68 pin SCSI-3 type connector when used with e.g. the TPMC460, TPMC630 or TPMC868. Refer to the TPMC Data Sheets to find out if the TPIM003 recreates the PMC front I/O signal mapping in its 68 pin SCSI-3 type connector.

The operating temperature is -40°C to +85°C.

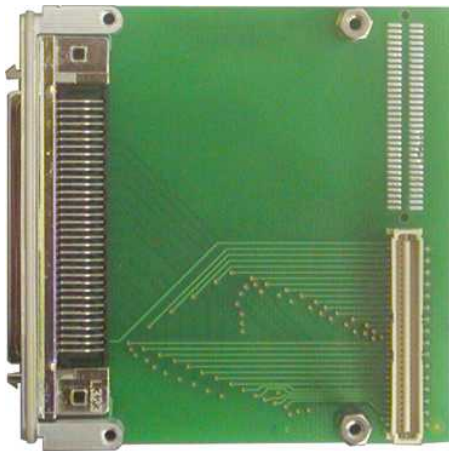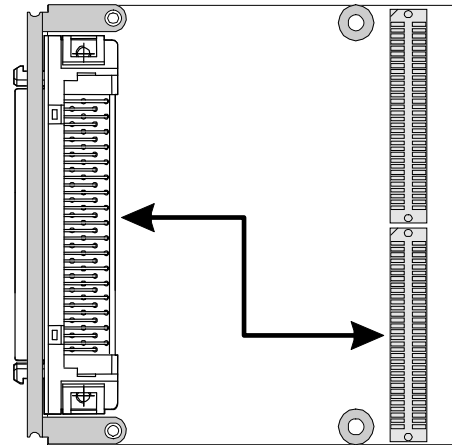## Technical Information

- ❍ Standard single-width PIM I/O Module
- ❍ Board size: 69 mm x 74 mm
- ❍ I/O lines are routed to a HD68 SCSI-3 type connector in the front panel
- ❍ EMI Front Panel
- ❍ Operating Temperature: -40°C to +85°C
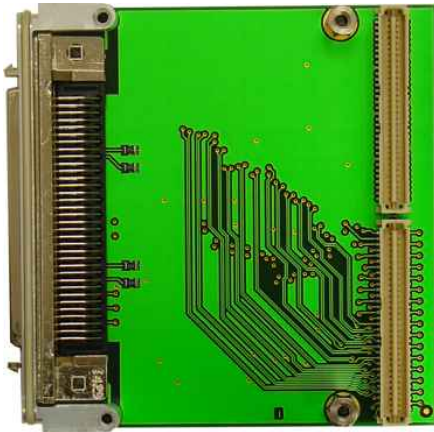

Order Information

TPIM003-10R   PIM I/O Module with HD68 SCSI-3 type connector for e.g. TPMC460, TPMC630 and TPMC868

TPIM003-10   None RoHS compliant version of TPIM003-10R

TPIM003-DOC   User Manual

TPIM004   PIM I/O Module for Quad Ethernet PMCs

Application Information

The TPIM004 is a standard single-width PIM I/O module. PIM Modules are used with a PIM Carrier like TEWS' TCP020-TM, TVME020-TM or others to offer easy access to the Back I/O lines of PMCs.

The TPIM004 provides access to the Fast Ethernet Ports of TEWS' Fast Ethernet PMCs with Back I/O like the TPMC882-1x or the TPMC382. Refer to the TPMC Data Sheets to find out, if the TPIM004 can be used with the corresponding PMC.

The operating temperature is -40°C to +85°C.

Technical Information

- ❍ Standard single-width PIM I/O Module
- ❍ Board size: 69 mm x 74 mm
- ❍ I/O lines are routed to RJ45 connectors in the front panel
- ❍ EMI Front Panel
- ❍ Operating Temperature: -40°C to +85°C

Order Information

TPIM004-10R   PIM I/O Module with 4 RJ45 connectors for e.g. TPMC382, and TPMC882

TPIM004-10   None RoHS compliant version of TPIM004-10R

TPIM004-DOC   User Manual

The Embedded I/O Company

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TPIM005   PIM I/O Module with 68 pin connector

Application Information

The TPIM005 is a standard single-width PIM I/O module to be used with any PIM Carrier like TEWS' TCP020-TM, TVME020-TM or others. It offers easy access to the PMC back I/O lines of PMC carriers with back I/O like TEWS TCP260 or TVME8400.
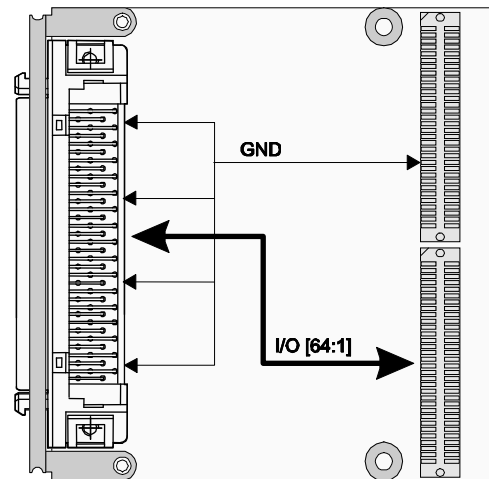

The TPIM005 distributes all 64 PMC back I/O lines to a 68 pin SCSI-3 type connector located in the EMI front panel. The routing and I/O signal mapping of the TPIM005 is optimized for differential pair routing.

The TPIM005 recreates the PMC front I/O signal mapping in its 68 pin SCSI-3 type connector when used with the TPMC863 or TPMC363. Refer to the TPMC Data Sheet to find out if the TPIM005 recreates the PMC front I/O signal mapping in its 68 pin SCSI-3 type connector.

The operating temperature is -40°C to +85°C.

Technical Information

❍ Standard single-width PIM I/O Module
❍ Board size: 69 mm x 74 mm
❍ I/O lines are routed to a HD68 SCSI-3 type connector in the front panel
❍ EMI Front Panel
❍ Operating Temperature: -40°C to +85°C
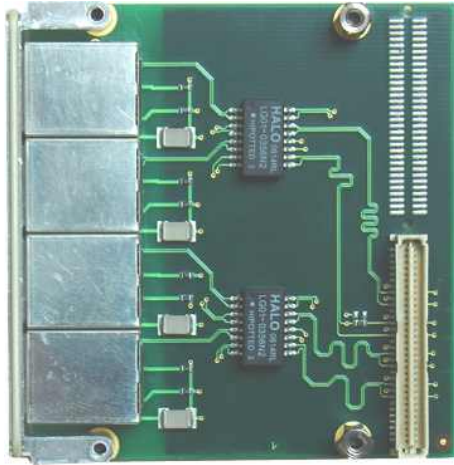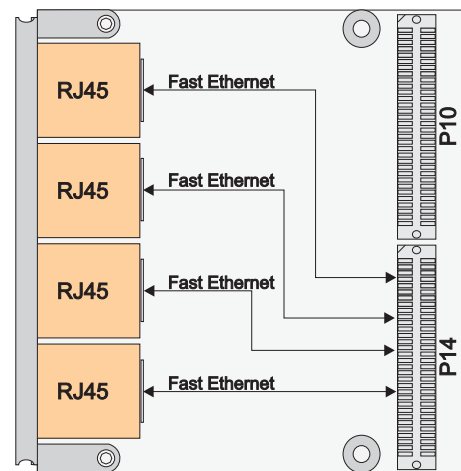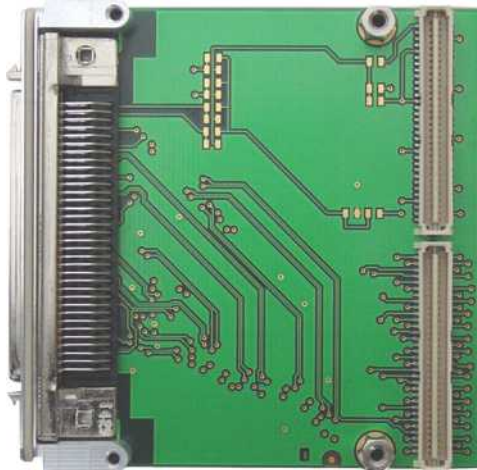

Order Information

TPIM005-10R	PIM I/O Module with HD68 SCSI-3 type connector
TPIM005-10	None RoHS compliant version of TPIM005-10R
TPIM005-DOC	User Manual

09/2009

PCI Modules

PCI is the most widely-used computer board form factor and bus structure in the world of personal computer technology. With the introduction of high-reliability systems and ruggedized packaging, the use of standard PCI edge cards has spread widely into the industrial, military and commercial marketplaces.

With our background and long-term experience in I/O solutions based on IndustryPack, PMC, CompactPCI, and VME standards, TEWS will grow the product range with the introduction of PCI modules.

If you wish to inquire about converting the functionality of any of our PMC modules to a PCI design, please contact TEWS directly at our offices in Germany or the United States.

In addition to our PCI modules, we offer a complete line of IndustryPack®, VMEbus, Compact PCI, and numerous PMC modules off-the-shelf.

All TEWS modules feature a five-year limited warranty, and many are offered standard in extended temperature (-40°C to +85°C). Software drivers for VxWorks, LynxOS, LiNUX, QNX, Integrity and Windows XP/XPE/2000 are available. For more information go to www.tews.com.

TPCI270 PMC Carrier for PCI Card Interface

Application Information

The TPCI270 is a standard 33 MHz, 32 bit PCI carrier for a single PMC Card. It provides PMC front I/O and PMC P14 rear I/O. This PMC to PCI adapter is used to build modular, flexible and cost effective I/O solutions with PMC devices in standard PCI systems.

The TPCI270 is used as a mechanical adapter to connect a PMC module into standard PCI bus based systems.

Operation with 3.3V and 5.0V PCI I/O signaling voltage guaranties compatibility with nearly all PC main boards.

The TPCI270-2x provides a local 3.3V Generation with a typical current limit of 2A for PC mainboards that do not support 3.3V as PCI supply voltage.

The TPCI270 offers standard PMC front I/O and PMC P14 rear I/O routed to a VME P2 style connector (603-2-IEC-C064-M).

Operating temperature range is -40°C to +85°C.

For First-Time-Buyers the Engineering Documentation TPCI270-ED is recommended. The Engineering Documentation includes TPCI270-DOC, schematics and data sheets of the TPCI270.

Technical Information

❍ PCI Card Interface, PCI 2.2 compliant interface
❍ One PMC sites conforming to PMC standard (IEEE 1386)
❍ PCI Interface: 33 MHz; 32 bit
❍ PCI I/O signaling voltage: 3.3V or 5.0V PCI 2.2 compliant interface
❍ Front panel I/O
❍ PMC P14 rear I/O connected to VME P2 style connector (603-2-IEC-C064-M)
❍ Size: 107 mm x 170 mm
❍ Operating temperature -40°C to +85°C

Order Information

RoHS Compliant

TPCI270-10R	PMC Carrier for PCI Card Interface
TPCI270-20R	PMC Carrier for PCI Card Interface with local 3.3 Volt Generation

None RoHS Compliant

TPCI270-10	None RoHS compliant version of TPCI270-10R
TPCI270-20	None RoHS compliant version of TPCI270-20R

Documentation

TPCI270-DOC	User Manual
TPCI270-ED	Engineering Documentation, includes TPCI270-DOC

TEWS TECHNOLOGIES

The Embedded I/O Company

TPMC117 6 Channel SSI, Incremental Encoder, Counter

Application Information

The TPMC117 is a standard single-width 32 bit PMC module and offers six independent channels. Each of these channels can operate as a standard SSI interface controller, in a SSI 'Listen only' Mode, as an incremental encoder or general purpose counter.

The standard SSI interface controller outputs a clock burst to the absolute encoder and receives the returned positional data. The SSI interface controller operates with a programmable clock rate from 1µs to 15µs and programmable data word length from 1 bit to 32 bit.

In 'Listen only' Mode the channel listens to an existing SSI interface to observe its data transfer. It takes both the SSI clock and data as inputs. In 'Listen only' Mode the channel also has a programmable data word length from 1 bit to 32 bit; the SSI clock rate of the observed SSI interface can be in the range of 1µs to 15µs.

In both modes the data word can be encoded in Binary- or in Gray code and with odd, even or no parity.

The 32 bit incremental encoder counter is a preloadable up- and down counter. The counter is programmable for single, double and quadruple analysis of the encoder signals. In conjunction with the isolated 24V digital inputs it provides the possibility of automatic preload of the counter whenever the motion system passes a reference position.

The 32 bit general purpose preloadable up- and down counter can be fed with an internal clock or with external signals.

Both counter modes offer a 32 bit preload register, a 32 bit compare register and various count modes.

In addition the TPMC117 provides a 16 bit down-counter with preload register which allows timing intervals of up to 65ms. It can be used as reference timer for closed loop applications or as trigger for the Multiple Channel Read function.

All data inputs are isolated. The level of the input signals can be RS422 or TTL. The input signals pass a digital filter for noise suppression before they are further used.

The level of the SSI clock output signals is RS422.

Each of the six motion control channels of the TPMC117 offers one isolated 24V digital input. The input circuit ensures a defined switching point and polarization protection against confusing the pole. The input has an electronic debounce circuit. All six 24V digital inputs can generate an interrupt, triggered on rising or falling edge. Depending on the selected mode the input can be used as general purpose input or reference input.

All signals are accessible through a HD68 SCSI-3 type front I/O connector.

The TPMC117 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the engineering documentation TPMC117-ED is recommended. The engineering documentation includes TPMC117-DOC, schematics and data sheets of TPMC117.

Software Support (TDRV005-SW-xx) for different operating systems is available.
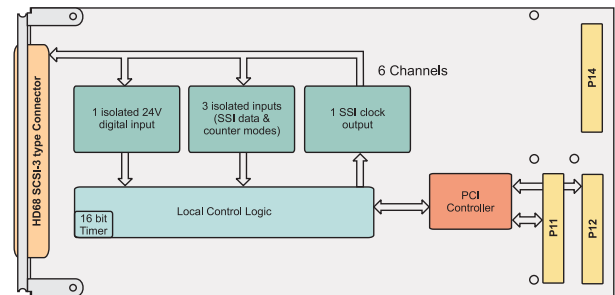

A 'Multiple Channel Read' function latches the actual values of all enabled channels whose values can then be read without interfering with normal function.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - ❍ Target Chip: PCI9030 (PLX Technology)
  - ❍ PCI 2.2 compliant interface
  - ❍ 5V and 3.3V PCI I/O signaling voltage
- ❍ Board size: 149 mm x 74 mm
- ❍ HD68 SCSI-3 type I/O connector mounted in front panel
- ❍ 6 Channels, independently configurable as standard SSI interface controller, SSI 'Listen only' Mode, incremental encoder or general purpose counter
- ❍ Standard SSI Interface
  - ❍ SSI data word length programmable from 1 bit to 32 bit
  - ❍ Data word encoding: Binary- or Gray-Code
  - ❍ Parity: Odd, even or without
  - ❍ SSI clock rate: 1µs – 15µs
- ❍ SSI 'Listen only' Mode
  - ❍ SSI data word length programmable from 1 bit to 32 bit
  - ❍ Data word encoding: Binary- or Gray-Code
  - ❍ Parity: Odd, even or without
- ❍ 32 bit incremental encoder counter
  - ❍ 32 bit preload register
  - ❍ 32 bit compare register
  - ❍ 1x, 2x or 4x resolution multiplier
  - ❍ Reference preload function
  - ❍ Various count- and control modes
- ❍ 32 bit general purpose counter
  - ❍ 32 bit preload register
  - ❍ 32 bit compare register
  - ❍ Various count and control modes
- ❍ Multiple channel read
- ❍ 16 bit down-counter with preload
- ❍ Inputs are isolated and TTL/RS422 compatible
- ❍ 6 isolated 24 V digital inputs: reference input or general purpose input depending on mode
- ❍ Operating temperature -40°C to +85°C

Order Information

RoHS Compliant

TPMC117-10R 6 Channel SSI, Incremental Encoder, Counter; Front panel I/O

None RoHS Compliant

TPMC117-10 None RoHS compliant version of TPMC117-10R

Documentation

TPMC117-DOC User Manual
TPMC117-ED Engineering documentation (TPMC117-DOC, Schematics, Assembly Drawing, Data Sheets)

Software

TDRV005-SW-25 Integrity Software Support
TDRV005-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV005-SW-65 Windows XP/XPE/2000 Software Support
TDRV005-SW-72 LynxOS Software Support
TDRV005-SW-82 LiNUX Software Support
TDRV005-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

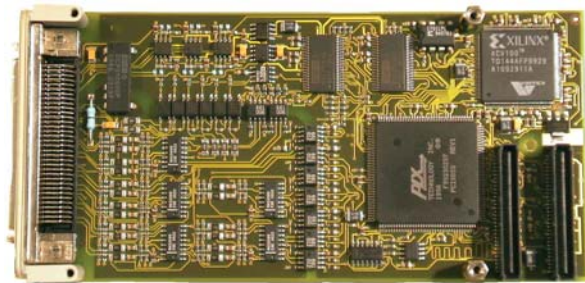**TA304** Cable Kit for modules with HD68 SCSI-3 type connector

TPMC118 6 Channel Motion Control

Application Information

The standard single-width 32 bit PMC module TPMC118 is designed for motion control applications offering six independent channels. Each channel consists of a TTL / RS422 compatible encoder interface, one digital 24V input and one +/-10V analog output.

The position feedback for each of the six channels is provided by an encoder interface and a 32 bit up/down counter with preload and latch register. The input level of the encoder signals can be TTL or RS422. All six encoder interfaces are isolated from the local controller unit by high speed optocouplers. An on board DC/DC converter supplies the isolated part. The encoder signals pass a digital filter for noise suppression before they are fed to the counters and reference logic. The counters are programmable for single, double and quadruple analysis of the encoder signals. The maximum frequency of the encoder inputs is 2 MHz.

An 'auto reference mode' provides the possibility of automatic preload of the encoder counter during normal operation, whenever the motion system passes the reference position.

Each of the six motion control channels of the TPMC118 offers one digital 24V input which is galvanically isolated by optocoupler. A high performance input circuit ensures a defined switching point and polarization protection against confusing the pole. The input has an electronic debounce circuit. Each of the six digital 24V inputs can generate an interrupt, triggered on rising or falling edge. Depending on the selected mode the input can be used as general purpose input or reference input.

The +/-10V analog output of each channel is realized by a 16 bit digital to analog converter (DAC). An operational amplifier is used to drive high capacitive loads and to protect the DAC's.

For First-Time-Buyers the Engineering Documentation TPMC118-ED is recommended. The Engineering Documentation includes TPMC118-DOC, schematics and data sheets of TPMC118.

Driver support (TPMC118-SW-xx) is available for different operating systems.

Technical Information

❏ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
❏ PCI 2.1 compliant interface
❏ 6 channel motion controller with 32 bit up/down counter with preload and output register
❏ Optocoupler for galvanic isolation
❏ On board DC/DC converter to supply isolated part of encoder interface
❏ 6 digital inputs, 24 V: reference input or general purpose input depending on mode
❏ 6 analog outputs, +/-10V: 16 bit DAC followed by operational amplifier
❏ Operating temperature 0° to +70°C

Order Information

RoHS Compliant
TPMC118-10R   6 Channel Motion Control

None RoHS Compliant
TPMC118-10   None RoHS compliant version of
TPMC118-10R

Documentation
TPMC118-DOC   User Manual
TPMC118-ED   Engineering Documentation, includes
TPMC118-DOC

Software
TPMC118-SW-25   Integrity Software Support
TPMC118-SW-42   VxWorks Software Support
(Legacy and VxBus-Enabled
Software Support)
TPMC118-SW-65   Windows XP/XPE/2000 Software
Support
TPMC118-SW-72   LynxOS Software Support
TPMC118-SW-82   LiNUX Software Support
TPMC118-SW-95   QNX 6 Software Support
For other operating systems please contact TEWS.

Related Products
TA304   Cable Kit for modules with HD68
connector

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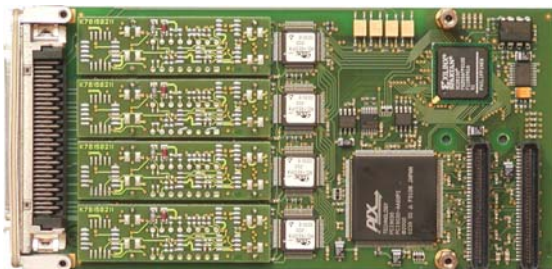e-mail: info@tews.com   www.tews.com

TPMC150 4, 3, 2 or 1 Channel Synchro/Resolver-to-Digital Converter

Application Information

The TPMC150 is a standard single-width 32 bit PMC module providing four (TPMC150-10), three (TPMC150-11), two (TPMC150-12) or one channel (TPMC150-13) of a Tracking Synchro/Resolver-To-Digital Converter (RDC) with a converter accuracy of 2 arcmin + 1LSB.

The TPMC150 is designed for use in high performance commercial, industrial and military systems. It can by used for many applications like motor control, robot axes control, process control, radar antenna position information, and CNC machine tooling.
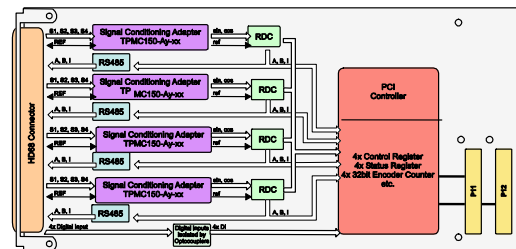

TPMC150-10R with TPCM150-A1-x

Each of the up to four RDC channels on the TPMC150 utilizes DDC's versatile state-of-the-art Tracking Synchro/Resolver-To-Digital Converter RDC19230 with programmable resolution. Resolution programming allows selection of 10, 12, 14 or 16 bit conversion. This combines the high tracking rate of a 10 bit converter with the precision of a 16 bit converter. The RDC19230 provides incremental encoder emulation. Encoder phase signals A, B and Index I are fed to an on board 32 bit up-/down encoder counter with preload and output register. Additionally the synthesized encoder signals are available for external use via RS485/422 output drivers. The RDC19230 provides a 4V velocity output with a linearity of 0.75%, which can be used to replace a tachometer. A 24V isolated digital input per channel can be used as general purpose input or as reference input.

A 'Simultaneous Read' function allows latching of the actual values of the selected converters at the same time.
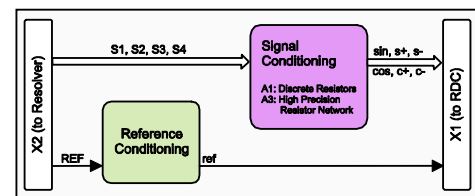
Signal Conditioning Adapters (TPMC150-Ay-xx) are required for each Synchro/Resolver channel to adapt the signal levels of the Synchro/Resolver to the RDC19230 and to configure the optional reference oscillator input/output. The Signal Conditioning Adapters will be built individually to customer specification of the Synchro or Resolver specifications.

Block diagram TPMC150-10x

The Signal Conditioning Adapters are factory installed on the TPMC150.

Four types of Signal Conditioning Adapters are available to adapt the signal levels of the Synchro/Resolver to the RDC19230: The TPMC150-A1-xx and the TPMC150-A2-xx use high precision, low TK discrete resistors. These adapters are mainly used for resolver applications. The TPMC150-A3-xx and the TPMC150-A4-xx use a high precision resistor network with matched resistors. These adapters are mainly used for synchro applications or resolver applications which require highest accuracy. Additionally the TPMC150-A2-xx and the TPMC150-A4-xx offer an on board reference oscillator with factory selectable frequencies in the range of 2 kHz to 10 kHz.

Signal Conditioning Adapter TPMC150-A1/A3

The on board encoder counter for each channel is a 32 bit up-/down counter with preload and output register. The encoder counter is fed with the emulated A, B and Index signals from the RDC19230. The counters are programmable for single, double and quad analysis of the incremental encoder signals. The counter can be manually or automatically loaded with the value of the preload register, depending on mode. An 'Auto-reference Mode' provides the possibility of automatic preload of the encoder counter during normal operation, whenever the motion system passes the reference position. A 'Simultaneous Read' function allows latching of the actual values of the selected encoder counters. These values can then be read successively without interfering with normal counter function.

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T E C H N O L O G I E S

Signal Conditioning Adapter TPMC150-A2/A4 with reference oscillator

The TPMC150 offers per channel one digital 24V Input which is galvanically isolated by optocouplers. A high performance input circuit ensures a defined switching point and polarization protection against confusing the pole. The inputs are electronically debounced. Each of the four digital 24V inputs can generate an interrupt, triggered on rising or falling edge. Depending on the selected mode the input can be used as general purpose input or as reference input.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - ❍ Target Chip: PCI 9030 (PLX Technology)
  - ❍ PCI 2.2 compliant interface
  - ❍ PCI I/O Signaling Voltage 3.3V and 5V
- ❍ Four, three, two or one channel Tracking Synchro/Resolver-To-Digital-Converter
  - ❍ Based on DCC's RDC19230
  - ❍ Programmable resolution 10, 12, 14 or 16 bits
  - ❍ Converter accuracy up to 2 arcmin + 1LSB
  - ❍ Velocity and built-in-test output
  - ❍ Incremental Encoder Emulation, encoder signals available as RS422/485 outputs
  - ❍ Simultaneous Read: The values of selected converters are latched and can be read successively without interfering with normal converter function
  - ❍ Individual input voltage for each channel by signal conditioning adapter TPMC150-Ay-xx
- ❍ Signal Conditioning Adapter
  - ❍ TPMC150-A1/A2: Signal conditioning by high precision, low TK discrete resistors
  - ❍ TPMC150-A3/A4: Signal conditioning by high precision resistor network with matched resistors
  - ❍ TPMC150-A2/-A4: Reference oscillator on signal conditioning adapter
    - ❍ Oscillator frequency factory selectable 2 – 10 kHz
    - ❍ Oscillator amplitude max. 11.8Vrms / 70mA
- ❍ 32 bit up/down encoder counter with preload and output register per channel
  - ❍ Utilizes the Incremental Encoder Emulation Signals of the RDC19230
  - ❍ Single, double or quad analysis of the Incremental Encoder signals
  - ❍ Preload register, manual or automatic preload of the counter, depending on mode
  - ❍ Simultaneous Read: The values of selected counters are latched and can be read successively without interfering with normal counter function
- ❍ 1 digital 24V input per channel
  - ❍ Acts as reference input or general purpose input depending on mode
  - ❍ Generate an interrupt on rising or falling edge, depending on mode
  - ❍ Galvanic isolation by optocoupler
  - ❍ Electronically debounced
  - ❍ Protected against confusing the pole
- ❍ All I/O on HD68 SCSI-3 type female connector; No P14 I/O
- ❍ Operating temperature -40° to +85°C

Order Information

RoHS Compliant

TPMC150-10R	Four channel tracking RDC, converter accuracy 2 arcmin +1LSB
TPMC150-11R	Three channel tracking RDC, converter accuracy 2 arcmin +1LSB
TPMC150-12R	Two channel tracking RDC, converter accuracy 2 arcmin +1LSB
TPMC150-13R	One channel tracking RDC, converter accuracy 2 arcmin +1LSB
TPMC150-A1-xxR	Resolver Signal Conditioning Adapter
TPMC150-A2-xxR	Resolver Signal Conditioning Adapter with reference oscillator

None RoHS Compliant

TPMC150-10	None RoHS compliant version of TPMC150-10R
TPMC150-11	None RoHS compliant version of TPMC150-11R
TPMC150-12	None RoHS compliant version of TPMC150-12R
TPMC150-13	None RoHS compliant version of TPMC150-13R
TPMC150-A1-xx	None RoHS compliant version of TPMC150-A1-xxR
TPMC150-A2-xx	None RoHS compliant version of TPMC150-A2-xxR
TPMC150-A3-xx	High Precision Synchro/Resolver Signal Conditioning Adapter (None RoHS compliant)
TPMC150-A4-xx	High Precision Synchro/Resolver Signal Conditioning Adapter with reference oscillator (None RoHS compliant)

Documentation

TPMC150-DOC	User Manual
TPMC150-ED	Engineering Documentation, includes TPMC150-DOC

Software

TPMC150-SW-25	Integrity Software Support
TPMC150-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC150-SW-65	Windows XP/XPE/2000 Software Support
TPMC150-SW-72	LynxOS Software Support
TPMC150-SW-82	LiNUX Software Support
TPMC150-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA304	Cable Kit for modules with HD68 connector

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TPMC310   Conduction Cooled PMC , Isolated 2 x CAN

Application Information

The TPMC310 is a conduction cooled single-width 32 bit PMC module providing two channel of high speed CAN bus interface.
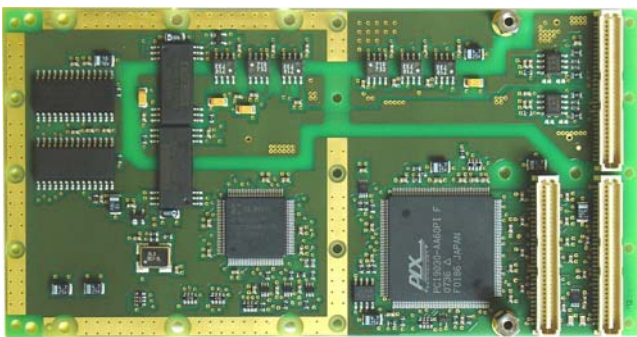
The PLX PCI9030 PCI Target Chip is used for the PCI interface.

Two Philips SJA1000 CAN controllers (CAN specification 2.0B supported) are used for the two CAN bus channels.

The CAN bus I/O interface provides two independent channels, isolated from system logic and from each other.

CAN High Speed transceivers are used for the CAN bus I/O interface. An on board termination option (solder pads) is provided for each CAN bus channel allowing to configure on board termination and pass through mode for the CAN bus.

The TPMC310 uses the P14 I/O connector for the CAN bus I/O interface.

For First Time Users the Engineering Documentation TPMC310-ED is recommended. The Engineering Documentation includes TPMC310-DOC, schematics and data sheets. Software support (TDRV010-SW-xx) for different operating systems is available.

Technical Information

- ❍ Conduction Cooled single-width 32 bit PMC module conforming to IEEE P1386.1
- ❍ PCI 2.1 compliant interface
- ❍ 3.3V and 5V PCI Signaling Voltage
- ❍ Board size: 144 mm x 74 mm
- ❍ CAN Bus Interface
  - Two channel High Speed CAN interface
  - Two Philips SJA1000 CAN controller
  - Supports CAN specification 2.0B
  - I/O interface based on TJA1050 transceiver, channels isolated from system logic and from each other
  - On board termination option for each CAN bus channel
- ❍ Operating temperature range –40°C to +85°C

Order Information

RoHS Compliant

TPMC310-10R   Conduction Cooled PMC, isolated 2 x CAN bus, P14 I/O

None RoHS Compliant

TPMC310-10   None RoHS compliant version of TPMC310-10R

Documentation

TPMC310-DOC   User Manual
TPMC310-ED   Engineering Documentation, includes TPMC310-DOC

Software

TDRV010-SW-25   Integrity Software Support
TDRV010-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV010-SW-65   Windows XP/XPE/2000 Software Support
TDRV010-SW-72   LynxOS Software Support
TDRV010-SW-82   LiNUX Software Support
TDRV010-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

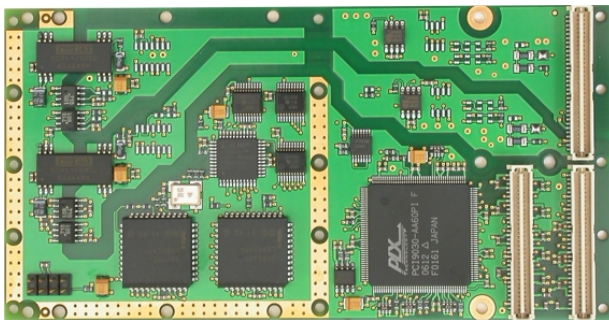**TPIM001**   PIM I/O Module with 50 pin SCSI-2 type connector

TEWS
T E C H N O L O G I E S

The Embedded I/O Company

TPMC316   Conduction Cooled PMC, Isolated 2 x CAN Bus

Application Information

The TPMC316 is a conduction cooled single-width 32 bit PMC module and provides two complete CAN bus interfaces using two Intel 82527 CAN controllers. Both channels are completely independent and support CAN specification 2.0 part A and B (standard 11 bit identifier and extended 29 bit identifier).
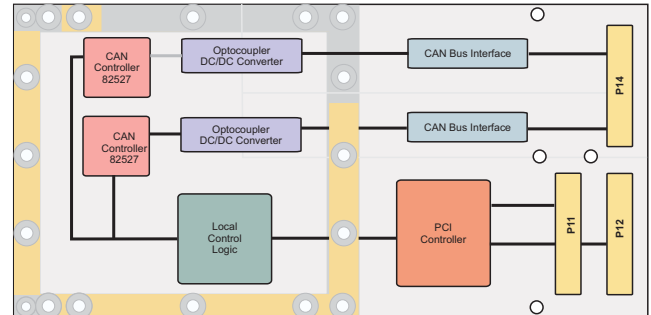
Each physical interface is optically isolated from the CAN controller and powered by an on board DC/DC converter and a voltage regulator. Two versions of physical interface are available: the TPMC316-10 supports CAN high speed for each of the two channels. The TPMC316-11 provides a modified RS485 interface for each of the two channels. The bus line termination can be enabled or disabled for each channel by solder pads (disabled per default).

The TPMC316 has no front panel. It uses P14 I/O connector with the same pin assignment as the TPMC816.

For First Time Users the Engineering Documentation TPMC316-ED is recommended. The Engineering Documentation includes TPMC316-DOC, schematics and data sheets.

Software Support (TDRV011-SW-xx) for different operating systems is available.

Technical Information

- Conduction Cooled single-width 32 bit PMC module conforming to   IEEE P1386.1, no front panel
- PCI 2.1 compliant interface
- 3.3V and 5V PCI Signaling Voltage
- Board size: 144 mm x 74 mm
- Two CAN bus interface based on Intel 82527 chip
- Support CAN specification 2.0 part A and B (standard and extended data frames)
- Programmable global mask
- 15 message objects of 8 byte data length
- Powerful error handling
- Programmable transfer rates
- Physical interface CAN High Speed (according to ISO 11 898) on TPMC316-10 or modified RS485 on TPMC316-11 per channel
- Physical interface optically isolated from CAN controller by on board DC/DC converter and optocoupler per channel
- Transfer rate 1 Mbit/s maximum (bus length up to 40 m)
- Operating temperature range –40°C to +85°C

Order Information

RoHS Compliant

TPMC316-10R Conduction Cooled PMC, Isolated 2 x CAN Bus (CAN High Speed)
TPMC316-11R Conduction Cooled, Isolated 2 x CAN Bus (modified RS485)

None RoHS Compliant

TPMC316-10 None RoHS compliant version of TPMC316-10R
TPMC316-11 None RoHS compliant version of TPMC316-11R

Documentation

TPMC316-DOC User Manual
TPMC316-ED Engineering Documentation, includes TPMC316-DOC

Software

TDRV011-SW-25 Integrity Software Support
TDRV011-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV011-SW-65 Windows XP/XPE/2000 Software Support
TDRV011-SW-72 LynxOS Software Support
TDRV011-SW-82 LiNUX Software Support
TDRV011-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TPIM001 PIM I/O Module with 50 pin SCSI-2 type connector

TPMC317 Conduction Cooled, 6 Channel SSI, Incremental Encoder, Counter

Application Information

The TPMC317 is a conduction cooled single-width 32 bit PMC module and offers six independent channels. Each of these channels can operate as a standard SSI interface controller, in a SSI 'Listen only' Mode, as an incremental encoder or general purpose counter.

The standard SSI interface controller outputs a clock burst to the absolute encoder and receives the returned positional data. The SSI interface controller operates with a programmable clock rate from 1µs to 15µs and programmable data word length from 1 bit to 32 bit.

In 'Listen only' Mode the channel listens to an existing SSI interface to observe its data transfer. It takes both the SSI clock and data as inputs. In 'Listen only' Mode the channel also has a programmable data word length from 1 bit to 32 bit; the SSI clock rate of the observed SSI interface can be in the range of 1µs to 15µs.

In both modes the data word can be encoded in Binary- or in Gray code and with odd, even or no parity.

The 32 bit incremental encoder counter is a preloadable up- and down counter. The counter is programmable for single, double and quadruple analysis of the encoder signals. In conjunction with the isolated 24V digital inputs it provides the possibility of automatic preload of the counter whenever the motion system passes a reference position.

The 32 bit general purpose preloadable up- and down counter can be fed with an internal clock or with external signals.

Both counter modes offer a 32 bit preload register, a 32 bit compare register and various count modes.

A 'Multiple Channel Read' function latches the actual values of all enabled channels whose values can then be read without interfering with normal function.

In addition the TPMC317 provides a 16 bit down-counter with preload register which allows timing intervals of up to 65ms. It can be used as reference timer for closed loop applications or as trigger for the Multiple Channel Read function.

All data inputs are isolated. The level of the input signals can be RS422 or TTL. The input signals pass a digital filter for noise suppression before they are further used.
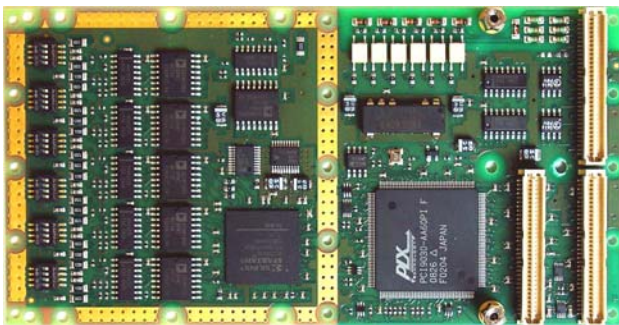
The level of the SSI clock output signals is RS422.

Each of the six motion control channels of the TPMC317 offers one isolated 24V digital input. The input circuit ensures a defined switching point and polarization protection against confusing the pole. The input has an electronic debounce circuit. All six 24V digital inputs can generate an interrupt, triggered on rising or falling edge. Depending on the selected mode the input can be used as general purpose input or reference input.

All signals are accessible through the P14 back I/O connector.

The TPMC317 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the engineering documentation TPMC317-ED is recommended. The engineering documentation includes TPMC317-DOC, schematics and data sheets of TPMC317.

Software Support (TDRV005-SW-xx) for different operating systems is available.

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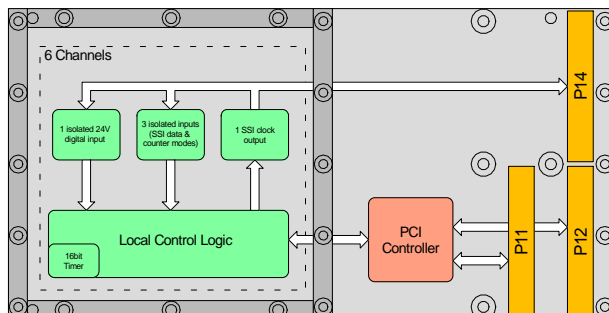
Technical Information

- ❍ Conduction cooled single-width 32 bit PMC module conforming to IEEE P1386.1
  - ❍ Target Chip: PCI9030 (PLX Technology)
  - ❍ PCI 2.2 compliant interface
  - ❍ 5V and 3.3V PCI I/O signaling voltage
- ❍ Board size: 149 mm x 74 mm
- ❍ P14 Back I/O connector
- ❍ 6 Channels, independently configurable as standard SSI interface controller, SSI 'Listen only' Mode, incremental encoder or general purpose counter
- ❍ Standard SSI Interface
  - ❍ SSI data word length programmable from 1 bit to 32 bit
  - ❍ Data word encoding: Binary- or Gray-Code
  - ❍ Parity: Odd, even or without
  - ❍ SSI clock rate: 1µs – 15µs
- ❍ SSI 'Listen only' Mode
  - ❍ SSI data word length programmable from 1 bit to 32 bit
  - ❍ Data word encoding: Binary- or Gray-Code
  - ❍ Parity: Odd, even or without
- ❍ 32 bit incremental encoder counter
  - ❍ 32 bit preload register
  - ❍ 32 bit compare register
  - ❍ 1x, 2x or 4x resolution multiplier
  - ❍ Reference preload function
  - ❍ Various count- and control modes
- ❍ 32 bit general purpose counter
  - ❍ 32 bit preload register
  - ❍ 32 bit compare register
  - ❍ Various count and control modes
- ❍ Multiple channel read
- ❍ 16 bit down-counter with preload
- ❍ Inputs are isolated and TTL/RS422 compatible
- ❍ 6 isolated 24 V digital inputs: reference input or general purpose input depending on mode
- ❍ Operating temperature -40°C to +85°C

Order Information

RoHS Compliant
TPMC317-10R   6 Channel SSI, Incremental Encoder, Counter; Front panel I/O

None RoHS Compliant
TPMC317-10   None RoHS compliant version of TPMC317-10R

Documentation
TPMC317-DOC   User Manual
TPMC317-ED   Engineering documentation (TPMC317-DOC, Schematics, Assembly Drawing, Data Sheets)

Software
TDRV005-SW-25   Integrity Software Support
TDRV005-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV005-SW-65   Windows XP/XPE/2000 Software Support
TDRV005-SW-72   LynxOS Software Support
TDRV005-SW-82   LiNUX Software Support
TDRV005-SW-95   QNX 6 Software Support

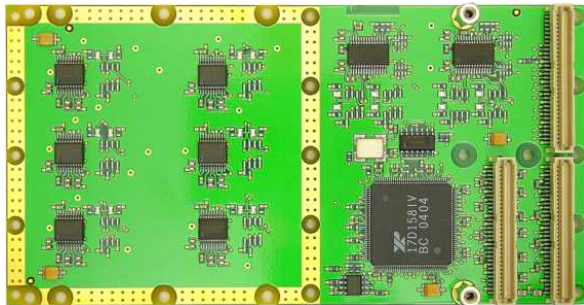For other operating systems please contact TEWS.

Related Products
TPIM002   PIM I/O Module with 68 pin SCSI-3 type connector

TPMC371   Conduction Cooled PMC, 8 Channel RS232/RS422

Application Information

The TPMC371 is a conduction cooled single-width 32 bit PMC module and offers 8 channels of high performance asynchronous serial interface.

Three different standard modules are available: The TPMC371-10x provides 8 RS232 interfaces. The TPMC371-11x provides 8 RS422 interfaces. The TPMC371-12x provides 4 RS232 and 4 RS422 interfaces.

TPMC371-10R

Other configurations are available as factory build option on a per channel base.

All modules offer P14 I/O. Each RS232 channel supports RxD, TxD, RTS, CTS and GND. Each RS422 channel supports RxD+/-, TxD+/- and GND. Two channels of the TPMC371-10x/-12x offer full modem support (TxD, RxD, CTS, RTS, DSR, DTR, CD, RI and GND) for RS232. Two channels of the TPMC371-11x support RxD+/-, TxD+/-, RTS+/-, CTS+/- and GND for RS422.

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422 channels. The UART offers readable FIFO levels.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the UART provides a special Global Interrupt Source Register.

All serial channels use ESD protected transceivers. ESD protection is up to ±15KV.
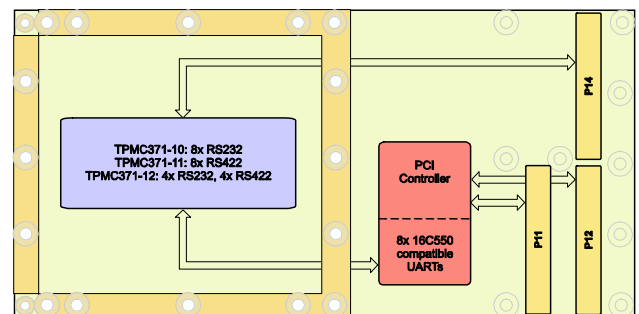
The TPMC371 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the Engineering Documentation TPMC371-ED is recommended. The Engineering Documentation includes TPMC371-DOC, schematics and data sheets of TPMC371.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

- ❍ Conduction cooled single-width 32 bit PMC module conforming to IEEE P1386.1, no front panel
  - ❍ Target Chip: XR17D158 (Exar)
  - ❍ PCI 2.3 compliant interface
  - ❍ PCI I/O signaling voltage 5V and 3.3V
- ❍ Board size: 143.75 mm x 74 mm
- ❍ Asynchronous serial interfaces
- ❍ Octal UART: Exar XR17D158
- ❍ Support of RxD, TxD, RTS, CTS and GND for each RS232 channel; RxD+/-, TxD+/- and GND for each RS422 channel. Two channels offer extended support (full modem or RTS+/- and CTS+/-)
- ❍ Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422: up to 5.5296 Mbps
- ❍ 64 byte transmit FIFO per channel
- ❍ 64 byte receive FIFO per channel
- ❍ Readable FIFO levels
- ❍ Global Interrupt Source Register
- ❍ General Purpose 16 bit Timer/Counter
- ❍ ESD protected transceiver (up to ± 15KV)
- ❍ Operating temperature -40°C to +85°C

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Order Information

RoHS Compliant

TPMC371-10R Conduction cooled 8 Channel Serial RS232 (2x full modem), P14 I/O
TPMC371-11R Conduction cooled 8 Channel Serial RS422 (2x plus RTS+/-, CTS+/-), P14 I/O
TPMC371-12R Conduction cooled 4 Channel Serial RS232 (2x full modem), 4 Channel Serial RS422, P14 I/O

Other configurations are available as factory build option on a per channel base.

None RoHS Compliant

TPMC371-10 None RoHS compliant version of TPMC371-10R
TPMC371-11 None RoHS compliant version of TPMC371-11R
TPMC371-12 None RoHS compliant version of TPMC371-12R

Documentation

TPMC371-DOC User Manual
TPMC371-ED Engineering Documentation (TPMC371-DOC, Schematics, Assembly Drawing, Data Sheets)

Software

TDRV002-SW-25 Integrity Software Support
TDRV002-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV002-SW-65 Windows XP/XPE/2000 Software Support
TDRV002-SW-72 LynxOS Software Support
TDRV002-SW-82 LiNUX Software Support
TDRV002-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TPIM001 PIM I/O Module with HD50 SCSI-2 type connector

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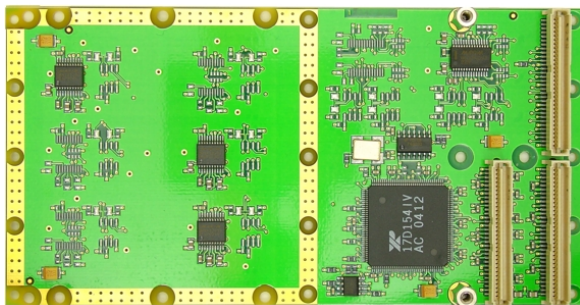
The Embedded I/O Company

TPMC372   Conduction Cooled PMC, 4 Channel RS232/RS422

Application Information

The TPMC372 is a conduction cooled single-width 32 bit PMC module and offers 4 channels of high performance asynchronous serial interface.

Three different standard modules are available: The TPMC372-10x provides 4 RS232 interfaces. The TPMC372-11x provides 4 RS422 interfaces. The TPMC372-12x provides 2 RS232 and 2 RS422 interfaces.

Other configurations are available as factory build option on a per channel base.

TPMC372-10R

All modules offer P14 I/O. Each RS232 channel supports RxD, TxD, RTS, CTS and GND. Each RS422 channel supports RxD+/-, TxD+/- and GND. One channel of the TPMC372-10x/-12x offers full modem support (TxD, RxD, CTS, RTS, DSR, DTR, CD, RI and GND) for RS232. One channel of the TPMC372-11x supports RxD+/-, TxD+/-, RTS+/-, CTS+/- and GND for RS422.

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422 channels. The UART offers readable FIFO levels.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the UART provides a special Global Interrupt Source Register.

All serial channels use ESD protected transceivers. ESD protection is up to ±15KV.
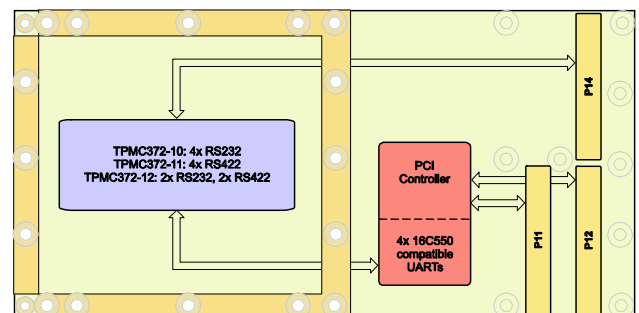
The TPMC372 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the Engineering Documentation TPMC372-ED is recommended. The Engineering Documentation includes TPMC372-DOC, schematics and data sheets of TPMC372.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

❍ Conduction cooled single-width 32 bit PMC module conforming to IEEE P1386.1, no front panel
  ❍ Target Chip: XR17D154 (Exar)
  ❍ PCI 2.3 compliant interface
  ❍ PCI I/O signaling voltage 5V and 3.3V
❍ Board size: 143.75 mm x 74 mm
❍ Asynchronous serial interface
❍ Quad UART: Exar XR17D154
❍ Support of RxD, TxD, RTS, CTS and GND for each RS232 channel; RxD+/-, TxD+/- and GND for each RS422 channel. One channel offers extended support (full modem or RTS+/- and CTS+/-)
❍ Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422: up to 5.5296 Mbps
❍ 64 byte transmit FIFO per channel
❍ 64 byte receive FIFO per channel
❍ Readable FIFO levels
❍ Global Interrupt Source Register
❍ General Purpose 16 bit Timer/Counter
❍ ESD protected transceiver (up to ± 15KV)
❍ Operating temperature -40°C to +85°C

Order Information

RoHS Compliant

TPMC372-10R Conduction cooled 4 Channel Serial RS232 (1x full modem), P14 I/O
TPMC372-11R Conduction cooled 4 Channel Serial RS422 (1x plus RTS+/-,CTS+/-), P14 I/O
TPMC372-12R Conduction cooled 2 Channel Serial RS232 (1x full modem), 2 Channel Serial RS422, P14 I/O

Other configurations are available as factory build option on a per channel base.

None RoHS Compliant

TPMC372-10 None RoHS compliant version of TPMC372-10R
TPMC372-11 None RoHS compliant version of TPMC372-11R
TPMC372-12 None RoHS compliant version of TPMC372-12R

Documentation

TPMC372-DOC User Manual
TPMC372-ED Engineering Documentation (TPMC372-DOC, Schematics, Assembly Drawing, Data Sheets)

Software

TDRV002-SW-25 Integrity Software Support
TDRV002-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV002-SW-65 Windows XP/XPE/2000 Software Support
TDRV002-SW-72 LynxOS Software Support
TDRV002-SW-82 LiNUX Software Support
TDRV002-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TPIM001 PIM I/O Module with HD50 SCSI-2 type connector

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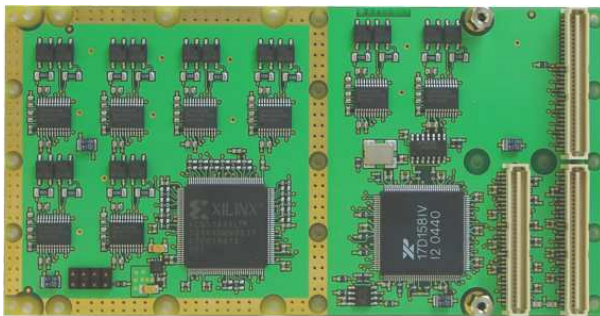## The Embedded I/O Company

TPMC375 Conduction Cooled PMC, 8 Channel RS232/RS422/RS485 Programmable Serial Interface

Application Information

The TPMC375 is a conduction cooled single-width 32 bit PMC module offering 8 channels of high performance RS232/RS422/RS485 programmable asynchronous serial interface with P14 I/O.

The serial channels can be individually programmed to operate as RS232, RS422 or RS485 full duplex/half duplex interface. In addition programmable termination is provided for the RS422/RS485 interfaces. After power-up all serial I/O lines are in a high impedance state.

Each RS232 channel supports RxD, TxD, RTS, CTS and GND. RS422 and RS485 full duplex support a four wire interface (RX+, RX-, TX+, TX-) plus ground (GND). RS485 half duplex supports a two wire interface (DX+, DX-) plus ground (GND).

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422/RS485 channels. The UART offers readable FIFO levels.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the UART provides a special Global Interrupt Source Register.

All serial channels use ESD protected transceivers. ESD protection is up to ±15KV.
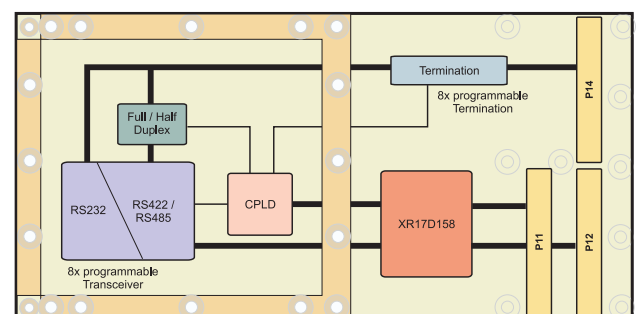
The TPMC375 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the Engineering Documentation TPMC375-ED is recommended. The Engineering Documentation includes TPMC375-DOC, schematics and data sheets of TPMC375.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

- Conduction cooled single-width 32 bit PMC module conforming to IEEE P1386.1, no front panel
  - Target Chip: XR17D158 (Exar)
  - PCI 2.3 compliant interface
  - PCI I/O signaling voltage 5V and 3.3V
- Board size: 143.75 mm x 74 mm
- Asynchronous serial interface
- Octal UART: Exar XR17D158
- Programmable Interfaces:
  - RS232
  - RS422
  - RS485 full duplex
  - RS485 half duplex
  - Programmable Termination for RS422/RS485
- Support of RxD, TxD, RTS, CTS and GND for each RS232 channel; RxD+/-, TxD+/- and GND for each RS422/RS485 FD channel; D+/- and GND for each RS485 HD channel.
- Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422/RS485: up to 5.5296 Mbps
- 64 byte transmit FIFO per channel
- 64 byte receive FIFO per channel
- Readable FIFO levels
- Global Interrupt Source Register
- General Purpose 16 bit Timer/Counter
- ESD protected transceiver (up to ± 15KV)
- Operating temperature -40°C to +85°C

09/2009

Order Information

RoHS Compliant
TPMC375-10R Conduction cooled 8 channel programmable serial interface, P14 I/O

None RoHS Compliant
TPMC375-10 None RoHS compliant version of TPMC375-10R

Documentation
TPMC375-DOC User Manual
TPMC375-ED Engineering Documentation (TPMC375-DOC, Schematics, Assembly Drawing, Data Sheets)

Software
TDRV002-SW-25 Integrity Software Support
TDRV002-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV002-SW-65 Windows XP/XPE/2000 Software Support
TDRV002-SW-72 LynxOS Software Support
TDRV002-SW-82 LiNUX Software Support
TDRV002-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
TPIM001 PIM I/O Module with HD50 SCSI-2 type connector

TEWS
TECHNOLOGIES
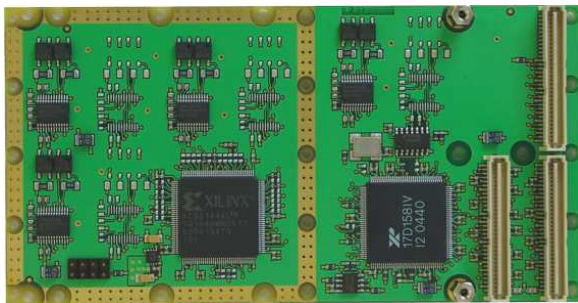
The Embedded I/O Company

TPMC376 Conduction Cooled PMC, 4 Channel RS232/RS422/RS485 Programmable Serial Interface

Application Information

The TPMC376 is a conduction cooled single-width 32 bit PMC module offering 4 channels of high performance RS232/RS422/RS485 programmable asynchronous serial interface with P14 I/O.

The serial channels can be individually programmed to operate as RS232, RS422 or RS485 full duplex / half duplex interface. In addition programmable termination is provided for the RS422/RS485 interfaces. After power-up all serial I/O lines are in a high impedance state.

Each RS232 channel supports RxD, TxD, RTS, CTS and GND. RS422 and RS485 full duplex support a four wire interface (RX+, RX-, TX+, TX-) plus ground (GND). RS485 half duplex supports a two wire interface (DX+, DX-) plus ground (GND).

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422/RS485 channels. The UART offers readable FIFO levels.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the UART provides a special Global Interrupt Source Register.

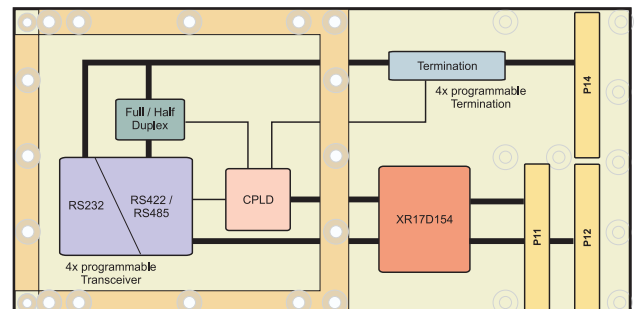All serial channels use ESD protected transceivers. ESD protection is up to ±15KV.

The TPMC376 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the Engineering Documentation TPMC376-ED is recommended. The Engineering Documentation includes TPMC376-DOC, schematics and data sheets of TPMC376.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

- Conduction cooled single-width 32 bit PMC module conforming to IEEE P1386.1, no front panel
    - Target Chip: XR17D154 (Exar)
    - PCI 2.3 compliant interface
    - PCI I/O signaling voltage 5V and 3.3V
- Board size: 143.75 mm x 74 mm
- Asynchronous serial interface
- Quad UART: Exar XR17D154
- Programmable Interfaces:
    - RS232
    - RS422
    - RS485 full duplex
    - RS485 half duplex
    - Programmable Termination for RS422/RS485
- Support of RxD, TxD, RTS, CTS and GND for each RS232 channel; RxD+/-, TxD+/- and GND for each RS422/RS485 FD channel; D+/- and GND for each RS485 HD channel.
- Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422/RS485: up to 5.5296 Mbps
- 64 byte transmit FIFO per channel
- 64 byte receive FIFO per channel
- Readable FIFO levels
- Global Interrupt Source Register
- General Purpose 16 bit Timer/Counter
- ESD protected transceiver (up to ± 15KV)
- Operating temperature -40°C to +85°C

The Embedded I/O Company

TEWS TECHNOLOGIES

Order Information

RoHS Compliant
TPMC376-10R   Conduction cooled 4 channel programmable serial interface, P14 I/O

None RoHS Compliant
TPMC376-10   None RoHS compliant version of TPMC376-10R

Documentation
TPMC376-DOC   User Manual
TPMC376-ED   Engineering Documentation (TPMC376-DOC, Schematics, Assembly Drawing, Data Sheets)

Software
TDRV002-SW-25   Integrity Software Support
TDRV002-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV002-SW-65   Windows XP/XPE/2000 Software Support
TDRV002-SW-72   LynxOS Software Support
TDRV002-SW-82   LiNUX Software Support
TDRV002-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
TPIM001   PIM I/O Module with HD50 SCSI-2 type connector

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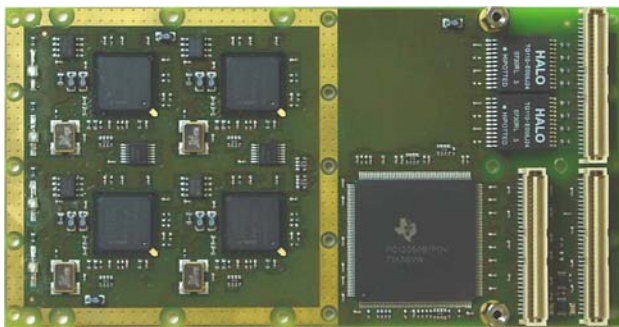## TPMC382   Conduction Cooled PMC, 4 x 10/100Mbit/s Ethernet

Application Information

The TPMC382 is a PCI Mezzanine Card (PMC) compatible module providing a four channel Ethernet 10BASE-T/100BASE-TX interface.

A transparent 32 bit / 66 MHz PCI-to-PCI Bridge provides access to the four Intel™ 82551IT Ethernet Controllers, which support 10 and 100 Mbit/s transmission rates for half and full duplex operation. Each channel of the TPMC382 is capable of performing an auto negotiation algorithm which allows both link-partners to find out the best link-parameters by themselves. The TPMC382 is widely user configurable via configuration and status register access over the PCI bus.

The TPMC382-10 routes all four Ethernet ports to the PMC back I/O P14 connector. The ports are galvanically isolated from the Ethernet Controller.

For First Time Users the Engineering Documentation TPMC382-ED is recommended. The Engineering Documentation includes TPMC382-DOC, schematics and data sheets.
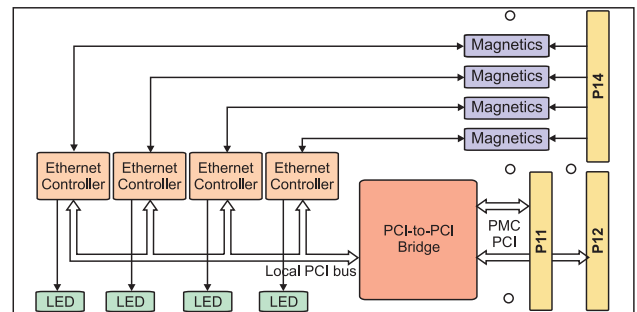

Driver Support:

o   The TPMC382 is directly supported from Linux, QNX6 (Neutrino) and LynxOS.

o   Software Support for Windows XP/2000/NT4.0 is available from Intel at www.intel.com

o   For all other operating systems please contact TEWS.

Technical Information

❍   Conduction cooled single-width 32 bit / 66 MHz PMC module conforming to IEEE P1386.1, no front panel
❍   PCI 2.1 compliant interface
❍   3.3V and 5V PCI Signaling Voltage
❍   Board size: 143.75 mm x 74 mm
❍   IEEE802.3 compliant LAN interface
❍   10BASE-T/100BASE-TX interface available
❍   Half or full-duplex operation
❍   3 Kbytes Transmit and Receive FIFOs per Channel
❍   Controllers support DMA cycles as bus masters
❍   Operating temperature range: -40°C to +85°C

Order Information

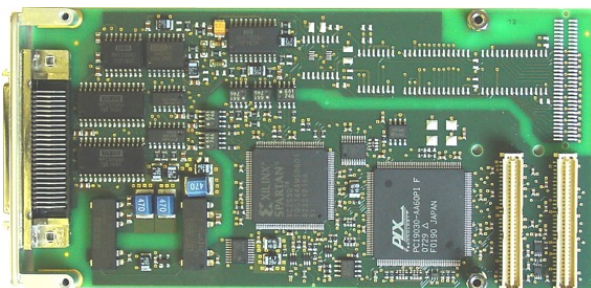|	
TPMC382-10R	Conduction cooled 4 x 10BASE-T /100BASE-TX Ethernet Interface P14 I/O, Extended Temperature Range
TPMC382-10	None RoHS compliant version of TPMC382-10R
TPMC382-DOC	User Manual
TPMC382-ED	Engineering Documentation, includes TPMC382-DOC

TPMC500   32 Channels of Isolated 12 bit A/D

Application Information

The TPMC500 is a PCI Mezzanine Card compatible module providing galvanically isolated 32 multiplexed 12 bit ADC with on board DC/DC converters. The data acquisition and conversion time is mode-dependent: Maximum 10µs without channel / gain change, maximum 12.5µs with channel / gain change.

The 32 ADC input channels can be software configured to operate in single-ended or differential mode with 16 input channels. The mixed mode is possible e.g. channel 1 to channel 8 selected as differential inputs and channel 9 to channel 16 and channel 25 to channel 32 as single-ended input channels.

The ADC multiplexer is overvoltage protected up to 70Vpp. A programmable gain amplifier allows gains of 1, 2, 5, 10 (TPMC500-10x, -12x, -20x and –22x) and 1, 2, 4, 8 (TPMC500-11x, -13x, -21x and –23x). The full-scale input voltage range is +/-10V for the TPMC500-1x0, -11x, -20x, -21x and 0V to 10V for the TPMC500-12x, -13x, -22x, -23x (for a gain of 1).

Additionally the TPMC500 provides a sequencer to control the analog inputs without wasting CPU time. Each channel can be independently enabled and configured by a sequencer instruction RAM. After the last instruction of a programmed sequence has been completed the ADC data of all channels enabled for the sequence are stored in the data RAM.

The repeat frequency of the sequencer can be programmed by using the sequence timer. The sequence timer is programmable from 100µs to 6.5535sec in steps of 100µs. Whenever the timer reaches the programmed value the sequencer starts a new sequence. A special function is the sequencer continuous mode. It is activated, if the sequence timer register is set to 0. In this mode the sequencer will start again with the first instruction of the sequence as soon as the last instruction of the previous sequence has been completed.
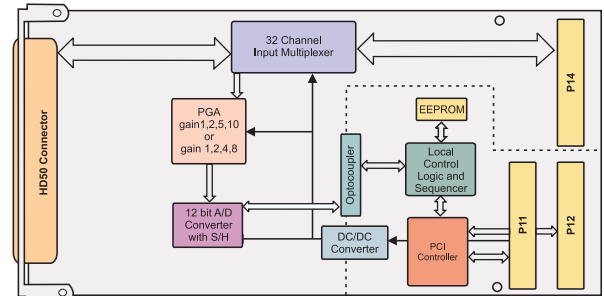
Each TPMC500 is factory calibrated. The calibration data is stored in an EEPROM unique to each TPMC500.

For First Time Users the Engineering Documentation TPMC500-ED is recommended. The Engineering Documentation includes TPMC500-DOC, schematics and data sheets.

Software support (TPMC500-SW-xx) is available for different operating systems.

Technical Information

- Standard single-width 32 bit PMC module conforming to   IEEE P1386.1
- PCI 2.1 compliant interface
- 3.3V and 5V PCI Signaling Voltage
- Board size: 149 mm x 74 mm
- 32 single-ended or 16 differential channels of isolated 12 bit A/D conversion
- Acquisition and conversion time up to 10 µs without and up to 12.5 µs with channel / gain change
- ESD protected input multiplexer
- Programmable gain amplifier: gain 1, 2, 5, 10 or 1, 2, 4, 8
- 12 bit A/D converter with internal S/H and reference
- Full-scale input range +/-10V at gain 1
- Interrupt capability at end-of-conversion
- Factory calibrated, calibration information stored in EEPROM

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Order Information

RoHS Compliant

TPMC500-10R	32 Single-ended or 16 Differential Channels of Isolated 12 bit A/D, gain 1, 2, 5, 10, input range +/- 10V, front panel I/O
TPMC500-11R	Same as TPMC500-10R but programmable gain of 1, 2, 4, 8
TPMC500-12R	Same as TPMC500-10R but 0-10V inputs
TPMC500-13R	Same as TPMC500-10R but programmable gain of 1, 2, 4, 8 and 0-10V inputs
TPMC500-20R	Same as TPMC500-10R but P14 I/O
TPMC500-21R	Same as TPMC500-11R but P14 I/O
TPMC500-22R	Same as TPMC500-12R but P14 I/O
TPMC500-23R	Same as TPMC500-13R but P14 I/O

None RoHS Compliant

TPMC500-10	None RoHS compliant version of TPMC500-10R
TPMC500-11	None RoHS compliant version of TPMC500-11R
TPMC500-12	None RoHS compliant version of TPMC500-12R
TPMC500-13	None RoHS compliant version of TPMC500-13R
TPMC500-20	None RoHS compliant version of TPMC500-20R
TPMC500-21	None RoHS compliant version of TPMC500-21R
TPMC500-22	None RoHS compliant version of TPMC500-22R
TPMC500-23	None RoHS compliant version of TPMC500-23R

Documentation

TPMC500-DOC	User Manual
TPMC500-ED	Engineering Documentation, includes TPMC500-DOC

Software

TPMC500-SW-25	Integrity Software Support
TPMC500-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC500-SW-65	Windows XP/XPE/2000 Software Support
TPMC500-SW-72	LynxOS Software Support
TPMC500-SW-82	LiNUX Software Support
TPMC500-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

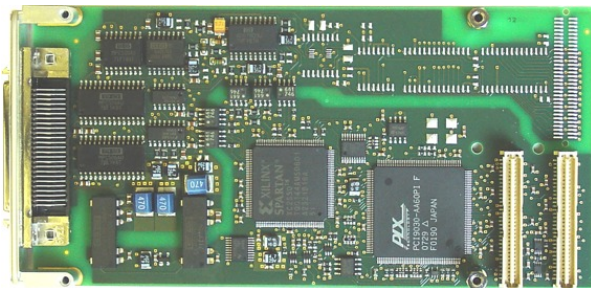|	
TA301	Cable Kit for modules with HD50 connector
TPIM001	PIM I/O Module with HD50 SCSI-2 type connector

TPMC501   32 Channels of Isolated 16 bit A/D

Application Information

The TPMC501 is a PCI Mezzanine Card compatible module with galvanically isolated 32 multiplexed 16 bit ADC with on board DC/DC converters. The data acquisition and conversion time is mode-dependent: Maximum 12µs without channel / gain change, maximum 14.5µs with channel / gain change.

The 32 ADC input channels can be software configured to operate in single-ended or differential mode with 16 input channels. The mixed mode is possible e.g. channel 1 to channel 8 selected as differential inputs and channel 9 to channel 16 and channel 25 to channel 32 as single-ended input channels.

The ADC multiplexer is overvoltage protected up to 70Vpp. A programmable gain amplifier allows gains of 1, 2, 5, 10 (TPMC501-10x, -12x, -20x and –22x) and 1, 2, 4, 8 (TPMC501-11x, -13x, -21x and –23x). The full-scale input voltage range is +/-10V for the TPMC501-10x, -11x, -20x, -21x and 0V to 10V for the TPMC501-12x, -13x, -22x, -23x (for a gain of 1).

Additionally the TPMC501 provides a sequencer to control the analog inputs without wasting CPU time. Each channel can be independently enabled and configured by a sequencer instruction RAM. After the last instruction of a programmed sequence has completed the ADC data of all channels enabled for the sequence are stored in the data RAM.
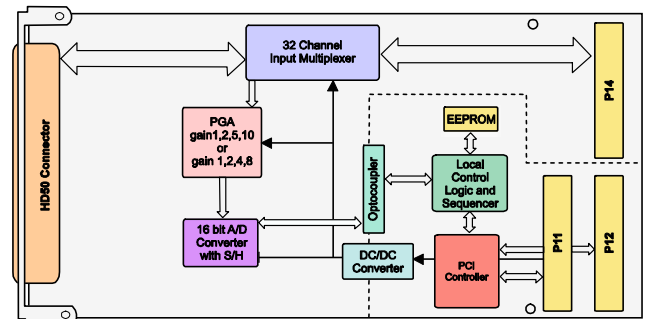

The repeat frequency of the sequencer can be programmed by using the sequence timer. The sequence timer is programmable from 100µs to 6.5535s in steps of 100µs. Whenever the timer reaches the programmed value the sequencer starts a new sequence. A special function is the sequencer continuous mode. It is activated, if the sequence timer register is set to 0. In this mode the sequencer will start again with the first instruction of the sequence as soon as the last instruction of the previous sequence has been completed.

Each TPMC501 is factory calibrated. The calibration data is stored in an EEPROM unique to each TPMC501.

For First Time Users the Engineering Documentation TPMC501-ED is recommended. The Engineering Documentation includes TPMC501-DOC, schematics and data sheets. Software Support (TPMC501-SW-xx) is available for different operating systems.

Technical Information

- ❑ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- ❑ PCI 2.1 compliant interface
- ❑ 3.3V and 5V PCI Signaling Voltage
- ❑ Board size: 149 mm x 74 mm
- ❑ 32 single-ended or 16 differential channels of isolated 16 bit A/D conversion
- ❑ Acquisition and conversion time up to 12µs without and up to 14.5µs with channel / gain change
- ❑ ESD protected input multiplexer
- ❑ Programmable gain amplifier: gain 1, 2, 5, 10 or 1, 2, 4, 8
- ❑ 12 bit A/D converter with internal S/H and reference
- ❑ Full-scale input range +/-10V at gain 1
- ❑ Interrupt capability at end-of-conversion
- ❑ Factory calibrated, calibration information stored in EEPROM

Order Information

RoHS Compliant

TPMC501-10R	32 Single-ended or 16 Differential Channels of Isolated 16 bit A/D, gain 1, 2, 5, 10, input range +/- 10V, front panel I/O
TPMC501-11R	Same as TPMC501-10 but programmable gain of 1, 2, 4, 8
TPMC501-12R	Same as TPMC501-10 but 0-10V inputs
TPMC501-13R	Same as TPMC501-10 but programmable gain of 1, 2, 4, 8 and 0-10V inputs
TPMC501-20R	Same as TPMC501-10R but P14 I/O
TPMC501-21R	Same as TPMC501-11R but P14 I/O
TPMC501-22R	Same as TPMC501-12R but P14 I/O
TPMC501-23R	Same as TPMC501-13R but P14 I/O

None RoHS Compliant

TPMC501-10	None RoHS compliant version of TPMC501-10R
TPMC501-11	None RoHS compliant version of TPMC501-11R
TPMC501-12	None RoHS compliant version of TPMC501-12R
TPMC501-13	None RoHS compliant version of TPMC501-13R
TPMC501-20	None RoHS compliant version of TPMC501-20R
TPMC501-21	None RoHS compliant version of TPMC501-21R
TPMC501-22	None RoHS compliant version of TPMC501-22R
TPMC501-23	None RoHS compliant version of TPMC501-23R

Documentation

TPMC501-DOC	User Manual
TPMC501-ED	Engineering Documentation, includes TPMC501-DOC

Software

TPMC501-SW-25	Integrity Software Support
TPMC501-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC501-SW-65	Windows XP/XPE/2000 Software Support
TPMC501-SW-72	LynxOS Software Support
TPMC501-SW-82	LiNUX Software Support
TPMC501-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

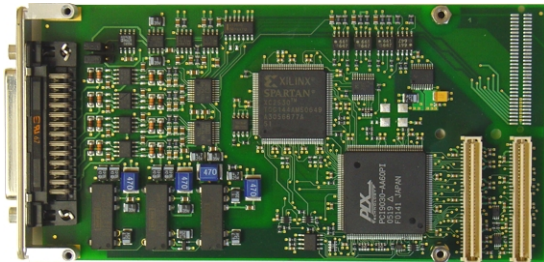|	
TA301	Cable Kit for modules with HD50 connector
TPIM001	PIM I/O Module with HD50 SCSI-2 type connector

TPMC550   8/4 Channels of Isolated 12 bit D/A

Application Information

The TPMC550 is a standard single-width 32 bit PMC module and provides 8 channels of isolated 12 bit analog outputs. A 4 channel version is available as TPMC550-11. The settling time to 0.012% is 10µs maximum.

It supports immediate and simultaneous load. The sequencer allows periodically update of enabled channels and the sequence timer range extends from 100µs to 6.5s.

The programmable output voltage range is +/-10V or 0-10V selectable by jumper. An on board DC/DC converter powers the isolated DAC and the output buffer.
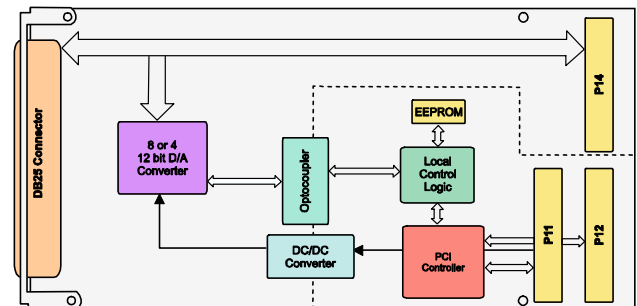
Each TPMC550 is factory calibrated. The calibration information is stored in the Identification-PROM unique to each PMC module.

For First Time Users the Engineering Documentation TPMC550-ED is recommended. The Engineering Documentation includes TPMC550-DOC, schematics and data sheets.

Software Support (TPMC550-SW-xx) is available for different operating systems.

Technical Information

❏ Standard single-width 32 bit PMC module conforming to   IEEE P1386.1
❏ PCI 2.1 compliant interface
❏ 3.3V and 5V PCI Signaling Voltage
❏ Board size: 149 mm x 74 mm
❏ 8 or 4 channels of isolated 12 bit analog outputs
❏ Settling time to 0.012% is 10µs maximum
❏ Full-scale output range +/- 10V or 0-10V
❏ Factory calibrated, calibration information stored in EEPROM

Order Information

RoHS Compliant

TPMC550-10R   8 Channels of Isolated 12 bit D/A, front panel I/O

TPMC550-11R   4 Channels of Isolated 12 bit D/A, front panel I/O

TPMC550-20R   8 Channels of Isolated 12 bit D/A, P14 I/O

TPMC550-21R   4 Channels of Isolated 12 bit D/A, P14 I/O

None RoHS Compliant

TPMC550-10   None RoHS compliant version of TPMC550-10R

TPMC550-11   None RoHS compliant version of TPMC550-11R

TPMC550-20   None RoHS compliant version of TPMC550-20R

TPMC550-21   None RoHS compliant version of TPMC550-21R

Documentation

TPMC550-DOC   User Manual

TPMC550-ED   Engineering Documentation, includes TPMC550-DOC

Software

TPMC550-SW-25   Integrity Software Support

TPMC550-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

TPMC550-SW-65   Windows XP/XPE/2000 Software Support

TPMC550-SW-72   LynxOS Software Support

TPMC550-SW-82   LiNUX Software Support

TPMC550-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA303   Cable Kit for modules with DB25 Female Connector

TPIM001   PIM I/O Module with HD50 SCSI-2 type connector

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TPMC551   8/4 Channels of Isolated 16-Bit D/A

Application Information

The TPMC551 is a standard single-width 32-bit PMC module providing optically isolated 16-bit analog outputs.

The number of D/A channels and the I/O connector depends on the module version. Settling time to 0.003% is 10µs typical. Immediate and simultaneous loading are supported.

A sequencer allows periodical updates of enabled channels and the sequence timer range extends from 100µs to 6.5s.
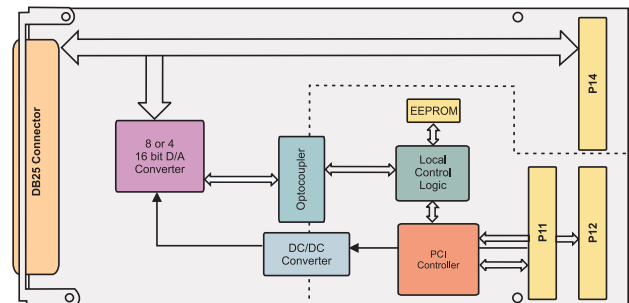
The TPMC551 offers two output voltage ranges, ±10 V and 0-10V, which are selectable by solder pads. An on board DC/DC converter powers the isolated DAC and the output buffers.

Each TPMC551 is delivered factory calibrated. The calibration information is stored in the Calibration-PROM unique to each PMC module.

For First-Time-Buyers the engineering documentation TPMC551-ED is recommended. The engineering documentation includes TPMC551-DOC, schematics and data sheets of TPMC551.

Technical Information

- ❍ Form Factor: Standard single-width 32-bit PMC module conforming to IEEE P1386/P1386.1
    - ❍ Board size: 147.5 mm x 74 mm
    - ❍ PCI v2.2 compliant interface
    - ❍ 3.3V and 5V PCI Signaling Voltage
- ❍ 16-bit D/A conversion
    - ❍ 0…10V or ±10V selectable output voltage range
    - ❍ 10µs maximum settling time
    - ❍ 4mA, 1000pF maximum load
- ❍ I/O access:
    - ❍ Front panel I/O: DB25 female connector
    - ❍ Back I/O: PMC P14 I/O connector
- ❍ Operating temperature -40°C to +85°C
- ❍ MTBF (MIL-HDBK217F/FN2 G_B 20°C)
    TPMC551-10x: 371000h
    TPMC551-11x: 512000h
    TPMC551-20x: 353000h
    TPMC551-21x: 479000h

Order Information

RoHS Compliant

TPMC551-10R	8 Channels of Isolated 16-bit D/A, Front Panel I/O
TPMC551-11R	4 Channels of Isolated 16-bit D/A, Front Panel I/O
TPMC551-20R	8 Channels of Isolated 16-bit D/A, P14 I/O
TPMC551-21R	4 Channels of Isolated 16-bit D/A, P14 I/O

None RoHS Compliant

TPMC551-10	None RoHS compliant version of TPMC551-10R
TPMC551-11	None RoHS compliant version of TPMC551-11R
TPMC551-20	None RoHS compliant version of TPMC551-20R
TPMC551-21	None RoHS compliant version of TPMC551-21R

Documentation

TPMC551-DOC	User Manual
TPMC551-ED	Engineering Documentation, includes TPMC551-DOC

Software

TPMC551-SW-25	Integrity Software Support
TPMC551-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC551-SW-65	Windows XP/XPE/2000 Software Support
TPMC551-SW-72	LynxOS Software Support
TPMC551-SW-82	LiNUX Software Support
TPMC551-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA303	Cable Kit for modules with DB25 female connector (for front I/O)
TA304	Cable Kit for modules with HD68 SCSI-3 type connector (for rear I/O)
TPIM002	PIM I/O Module with HD68 SCSI-3 type connector

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TPMC553   32 /16 Channels of 16 bit D/A

Application Information

The TPMC553 is a standard single-wide 32 bit PMC module and provides 32/16 channels of 16 bit analog outputs. All signals are accessible through a HD68 SCSI-3 type front I/O connector.

The software selectable output voltage ranges are 0-5V, 0-10V, 0-10.8V, ±5V, ±10V or ±10.8V. The output voltage range can be individually set per channel. The conversion time is typ. 10 µs and the DAC outputs are capable to drive a load of 2kΩ, with a capacitance up to 4000pF.
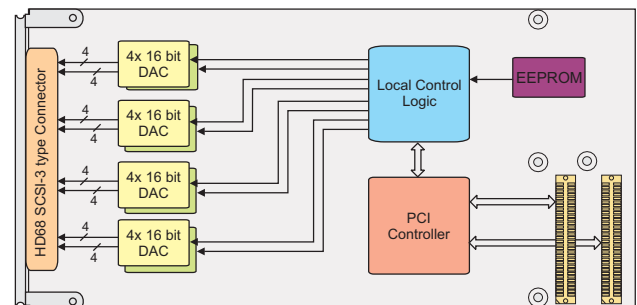
Beside of an individual channel update, the double buffered DACs allow simultaneous update of all channels. Additionally a sequencer on the TPMC553 allows to periodically update enabled channels with a sequence timer range that extends from 10µs to 167s.

Each TPMC553 is factory calibrated. The calibration information is stored in an on board serial EEPROM unique to each PMC module.

For First-Time-Buyers the engineering documentation TPMC553-ED is recommended. The engineering documentation includes TPMC553-DOC, schematics and data sheets of the TPMC553.

Technical Information

- ❍ Form Factor: Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - ❍ Board size: 149 mm x 74 mm
  - ❍ Target Chip: PCI9030 (PLX Technology)
  - ❍ PCI 2.1 compliant interface
  - ❍ PCI I/O signaling voltage 5V or 3.3V
- ❍ 32/16 channels single-ended 16 bit analog output
  - ❍ Programmable output voltage: 0-5V, 0-10V, 0-10.8V, ±5V, ±10V, ±10.8V
  - ❍ Conversion time: typ.10µs
  - ❍ Up to 2kΩ resistive, 4000pF capacitive load
  - ❍ Overcurrent protection
  - ❍ Individual channel update, simultaneous update of all channels or sequencer mode
- ❍ Factory calibration data stored in EEPROM
- ❍ Operating temperature -40°C to +85°C
- ❍ MTBF (MIL-HDBK217F/FN2 G_B 20°C):
  - TPMC553-10x: 683000 h
  - TPMC553-11x: 689000 h

Order Information

RoHS Compliant

TPMC553-10R   32 Channels of 16 bit D/A
TPMC553-11R   16 Channels of 16 bit D/A

None RoHS Compliant

TPMC553-10   None RoHS compliant version of
TPMC553-10R
TPMC553-11   None RoHS compliant version of
TPMC553-11R

Documentation

TPMC553-DOC   User Manual
TPMC553-ED   Engineering documentation (TPMC553-
DOC, Schematics, Assembly Drawing,
Data Sheets)

Software

TPMC553-SW-25   Integrity Software Support
TPMC553-SW-42   VxWorks Software Support
(Legacy and VxBus-Enabled
Software Support)
TPMC553-SW-65   Windows XP/XPE/2000
Software Support
TPMC553-SW-72   LynxOS Software Support
TPMC553-SW-82   LiNUX Software Support
TPMC553-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
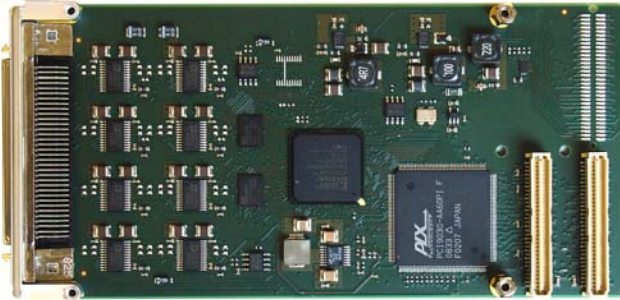
TA304   Cable Kit for modules with HD68
connector
TPIM002   PIM I/O Module with HD68 SCSI-3
type connector

TEWS

T E C H N O L O G I E S

The Embedded I/O Company

TPMC554   32 / 16 Channels of 16 bit D/A with memory

Application Information

The TPMC554 is a standard single-wide 32 bit PMC module and provides 32/16 channels of 16 bit analog outputs. All signals are accessible through a HD68 SCSI-3 type front I/O connector.

The software selectable output voltage ranges are 0V-5V, 0V-10V, 0V-10.8V, ±5V, ±10V and ±10.8V. The output voltage range can be set individually per channel. The conversion time is typ. 10µs and the DAC outputs are capable to drive a load of 2kΩ, with a capacitance up to 4000pF.

Besides of an individual channel update, the double buffered DACs allow simultaneous update of all channels. Additionally a sequencer on the TPMC554 allows updating enabled channels periodically with a sequence timer range that extends from 10µs to 11.93h.
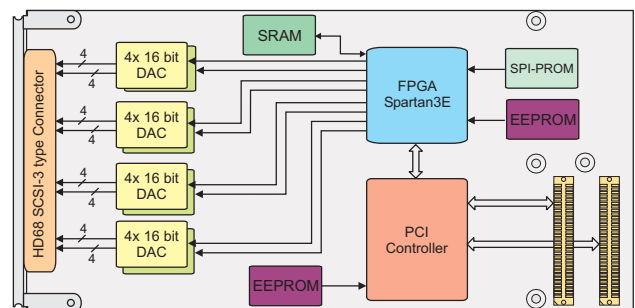
In addition to the double buffered distributed RAM inside the FPGA the TPMC554 provides 2 M x 16 bit external SRAM to store values that are known in advance. This feature can also be used to periodically output any kind of waveform or bit pattern. The size of the FIFO for each DAC channel is adjustable.

Each TPMC554 is factory calibrated. The calibration information is stored in an on board serial EEPROM unique to each PMC module.

For First-Time-Buyers the engineering documentation TPMC554-ED is recommended. The engineering documentation includes TPMC554-DOC, schematics and data sheets of the TPMC554.

Technical Information

- Form Factor: Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - Board size: 149 mm x 74 mm
  - Target Chip: PCI9030 (PLX Technology)
  - PCI 2.1 compliant interface
  - PCI I/O signaling voltage 5V or 3.3V
- 32/16 channels single-ended 16 bit analog output
  - Programmable output voltage: 0V-5V, 0V-10V, 0V-10.8V, ±5V, ±10V, ±10.8V
  - Conversion time: typ.10µs
  - Up to 2kΩ resistive, 4000pF capacitive load
  - Overcurrent protection
  - Individual channel update, simultaneous update of all channels or sequencer mode
- 2 M x 16 bit SRAM to store voltage values
- Factory calibration data stored in EEPROM
- Operating temperature -40°C to +85°C
- MTBF (MIL-HDBK217F/FN2 G_B 20°C):
  - TPMC554-10R: 665000 h
  - TPMC554-11R: 678000 h

Order Information

RoHS Compliant

TPMC554-10R   32 Channels of 16 bit D/A (RoHS compliant version)

TPMC554-11R   16 Channels of 16 bit D/A (RoHS compliant version)

Documentation

TPMC554-DOC   User Manual

TPMC554-ED   Engineering documentation (TPMC554-DOC, Schematics, Assembly Drawing, Data Sheets)

Software

TPMC554-SW-25   Integrity Software Support

TPMC554-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

TPMC554-SW-65   Windows XP/XPE/2000 Software Support

TPMC554-SW-72   LynxOS Software Support

TPMC554-SW-82   LiNUX Software Support

TPMC554-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA304   Cable Kit for modules with HD68 connector RoHS compliant version

TPIM002   PIM I/O Module with HD68 SCSI-3 type connector (RoHS compliant version)

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e-mail: info@tews.com   www.tews.com

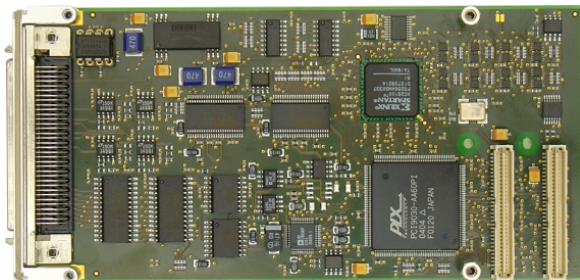## TPMC851 Multifunction I/O (16 bit AD, 16 bit DA, TTL I/O, Counter)

Application Information

The TPMC851 combines 32 single ended / 16 differential channels of 16 bit multiplexed analog input, 8 channels of 16 bit analog output, 16 digital I/O lines and a 32 bit multi-purpose counter on a standard single-width PMC module.

A 16 bit ADC converts 32 single-ended or 16 differential multiplexed ADC input channels. The data acquisition and conversion time is up to 1.25 µs without channel/gain change and up to 17.25 µs with channel/gain change. The input multiplexer of the A/D circuit offers analog overvoltage protection of up to 70Vpp. A programmable gain amplifier allows gains of 1, 2, 4 or 8 resulting in input voltage ranges of ±10V, ±5V, ±2.5V or ±1.25V.

The ADC part of the TPMC851 can operate in Manual Mode or Sequencer Mode:

❍ Manual Mode
In Manual Mode the multiplexer, programmable gain amplifier and the converter are fully controlled by the user. A conversion for a selected channel / gain can be started automatically after the settling time has elapsed, or manually by the user.

❍ Sequencer Mode
In Sequencer Mode each of the A/D channels can be independently enabled and configured for the sequencer. The sequencer can run continuously, at specific time intervals, or it may be triggered by an external event. Conversion data is stored in a data RAM.

The 8 analog output channels are realized by eight 16 bit digital to analog converters (DACs). The conversion time is 10 µs. An operational amplifier drives the full-scale range of ±10V and is capable to drive high capacitive loads. Similar to the analog inputs a sequencer can control the analog outputs.

Following operation modes are available:

❍ Immediate Update: Updates the DAC output immediately when new data is written to the DAC channel.

❍ Simultaneous Update: DAC data is buffered and all DAC outputs are updated simultaneously on a trigger event:
  ❍ Manual Update: Updates all DAC outputs on a manual event (register write)
  ❍ Trigger Update: Updates all DAC outputs on a external event
  ❍ Sequencer Update: Updates all DAC outputs after the sequencer timer has elapsed

Each TPMC851 is factory calibrated. The calibration data is stored in an EEPROM unique to each TPMC851.

The 16 digital TTL tri-state I/O lines with 4.7kΩ pull up resistors are ESD protected and protected against overvoltage. All 16 lines can be individually programmed as input or output, and can generate an interrupt on negative and positive transitions. Each input has an electronic debounce circuit to prevent short spikes on the input lines to cause an interrupt. The digital inputs can supply the external signals for the ADC and DAC sequencer and the 32 bit counter.
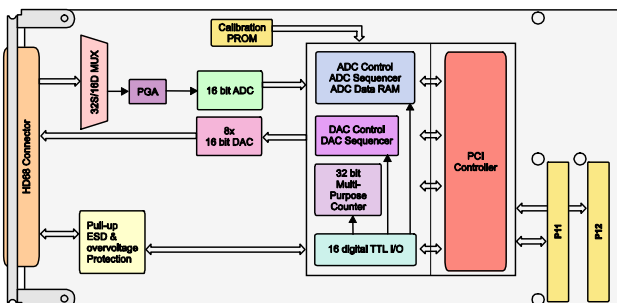
Additionally the TPMC851 offers a 32 bit multi-purpose counter. The counter includes a 32 bit preload register and a 32 bit compare register. The 32 bit counter can be fed with an internal clock or with an external signal supplied by the digital inputs. The 4 counter input modes determine the interpretation of the input signals. Additionally 3 count modes, which describe the behavior of the counter, and 4 control modes are available:

❍ Counter Input Modes
  ❍ Internal clock with prescaler
  ❍ Up/Down count
  ❍ Direction count
  ❍ Quadrature count with 1x, 2x or 4x resolution multiplier
❍ Count Modes
  ❍ Cycling Counter
  ❍ Divide-by-N
  ❍ Single Cycle
❍ Control Modes
  ❍ Load on Control
  ❍ Latch on Control
  ❍ Gate on Control
  ❍ Reset on Control

For First-Time-Buyers the Engineering Documentation TPMC851-ED is recommended. The Engineering Documentation includes TPMC851-DOC, schematics and data sheets of TPMC851.

Technical Information

- ❏ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - ❏ Target Chip: PCI9030 (PLX Technology)
  - ❏ PCI 2.2 compliant interface
  - ❏ PCI I/O signaling voltage 5V and 3.3V
- ❏ 32 channels single-ended or 16 channel differential 16 bit multiplexed analog input
  - ❏ Programmable gain amplifier (gain 1, 2, 4 or 8)
  - ❏ Full-scale input range: ±10V (at gain 1)
  - ❏ Conversion time depends on mode: min 1.25 µs, max 17.25 µs
  - ❏ 70Vpp overvoltage protection
  - ❏ Sequencer
- ❏ 8 channels 16 bit analog output
  - ❏ Output voltage: ±10V
  - ❏ Conversion time: 10 µs
  - ❏ Up to 10,000pF capacitive load
  - ❏ Sequencer
- ❏ 16 digital TTL I/O lines with pull up resistors
  - ❏ Individually programmable as input or output
  - ❏ Programmable debounce time (100ns – 6.55ms)
  - ❏ Interrupt capable
  - ❏ 32mA source/sink
  - ❏ 4.7kΩ pull-up resistor
  - ❏ ESD and overvoltage protected
- ❏ 32 bit multi-purpose counter
  - ❏ 32 bit preload register
  - ❏ 32 bit compare register
  - ❏ Various count- and control modes
  - ❏ Count frequency: External clock up to 10 MHz; internal clock 5, 10, 20 or 40 MHz
- ❏ Factory calibrated, calibration data stored in EEPROM
- ❏ Operating temperature -40°C to +85°C

Order Information

RoHS Compliant
TPMC851-10R Multifunction I/O (16 bit AD/DA, TTL I/O, Counter)

None RoHS Compliant
TPMC851-10 None RoHS compliant version of TPMC851-10R

Documentation
TPMC851-DOC User Manual
TPMC851-ED Engineering Documentation (TPMC851-DOC, Schematics, Assembly Drawing, Data Sheets)

Software
TPMC851-SW-25 Integrity Software Support
TPMC851-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC851-SW-65 Windows XP/XPE/2000 Software Support
TPMC851-SW-72 LynxOS Software Support
TPMC851-SW-82 LiNUX Software Support
TPMC851-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
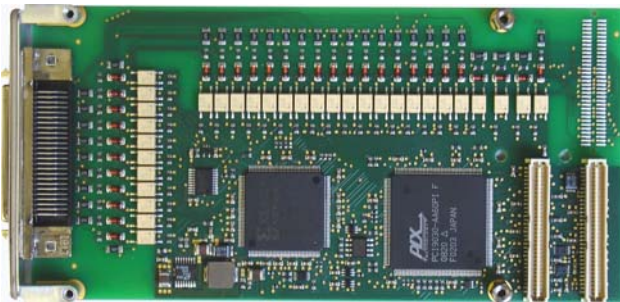**TA304-10** Cable Kit for modules with HD68 connector

09/2009

TPMC600   32 / 16 Interrupt Generating Digital Inputs (24V)

Application Information

The TPMC600 is a PMC compatible module and has 32 digital inputs galvanically isolated by optocouplers. The individual inputs are separated in groups of 4 sharing a common ground input. These groups are potential free to each other. A high performance input circuit ensures a defined switching point and polarization protection against confusing the pole. All inputs have an electronic debounce circuit with a programmable debounce time.

A version with 16 inputs is also available where modules with front respectively back panel I/O are available. All inputs can generate an interrupt. The signal edge handling is programmable.
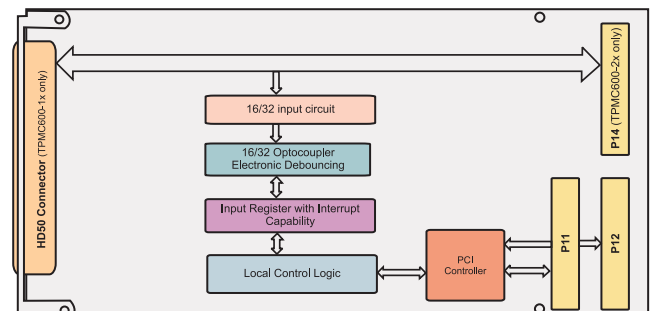
For First Time Users the Engineering Documentation TPMC600-ED is recommended. The Engineering Documentation includes TPMC600-DOC, schematics and data sheets.

Software Support (TPMC600-SW-xx) for different operating systems is available.

Technical Information

- ❍ Form Factor: Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - ❍ Board size: 149 mm x 74 mm
- ❍ PCI r2.2 compliant interface, 32 bit, 33 MHz
- ❍ 3.3V and 5V PCI Signaling Voltage
- ❍ 32 / 16 interrupt generating digital inputs
- ❍ 24 V signal voltage for inputs, other voltages on request
- ❍ Optocoupler for galvanic isolation of inputs to computer
- ❍ All inputs isolated to each other in groups of four inputs
- ❍ Protection against confusing the pole
- ❍ Programmable electronic debounce circuit (7µs to 440 ms in steps of 7µs)
- ❍ Operating temperature -40°C to +85°C
- ❍ MTBF (MIL-HDBK217F/FN2 G_B 20°C)
  TPMC600-10x/-20x: 497226 h
  TPMC600-11x/-21x: 546572 h

Order Information

RoHS Compliant

TPMC600-10R	32 Interrupt Generating Digital Inputs, Front panel I/O
TPMC600-11R	16 Interrupt Generating Digital Inputs, Front panel I/O
TPMC600-20R	32 Interrupt Generating Digital Inputs, P14 I/O
TPMC600-21R	16 Interrupt Generating Digital Inputs, P14 I/O

None RoHS Compliant

TPMC600-10	None RoHS compliant version of TPMC600-10R
TPMC600-11	None RoHS compliant version of TPMC600-11R
TPMC600-20	None RoHS compliant version of TPMC600-20R
TPMC600-21	None RoHS compliant version of TPMC600-21R

Documentation

TPMC600-DOC	User Manual
TPMC600-ED	Engineering Documentation, includes TPMC600-DOC

Software

TPMC600-SW-25	Integrity Software Support
TPMC600-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC600-SW-65	Windows XP/XPE/2000 Software Support
TPMC600-SW-72	LynxOS Software Support
TPMC600-SW-82	LiNUX Software Support
TPMC600-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

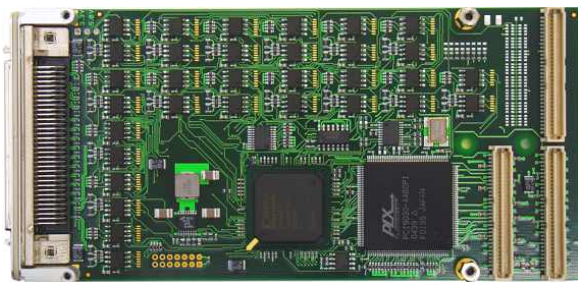|	
TA301	Cable Kit for modules with HD50 connector
TPIM001	PIM I/O Module with HD50 SCSI-2 type connector

TPMC630   Reconfigurable FPGA with 64 TTL I/O / 32 Diff. I/O

Application Information

The TPMC630 is a standard single-width 32 bit PMC module providing a user configurable FPGA with 300,000 (TPMC630-1x) or 600,000 (TPMC630-2x) system gates. All local signals from the PCI controller are routed to the FPGA.

The TPMC630-x0x has 64 ESD-protected TTL lines, the TPMC630-x1x provides 32 differential I/O lines using EIA-422 / EIA-485 compatible, ESD-protected line transceivers. The TPMC630-x2x provides 32 TTL and 16 differential I/Os. All lines are individually programmable as input or output. The receivers are always enabled, which allows determining the state of each I/O line at any time. This can be used as read back function for lines configured as outputs. Each TTL I/O line has a pull-up resistor. The pull-up voltage is selectable to be either +3.3V or +5V. The differential I/O lines are terminated by 120Ω resistors.

The FPGA is configured by a serial Flash. The Flash device is in-system programmable via driver software over the PCI bus. An in-circuit debugging option is available via an optionally mountable JTAG header (on the backside of the board) for readback and real-time debugging of the FPGA design (using Xilinx "ChipScope").

A programmable clock generator supplies up to six different clock frequencies between 200 kHz and 166 MHz. All outputs are available at the FPGA, one clock source is in addition used as the local clock signal for the PCI controller. The clock generator settings are stored in an EEPROM and can be changed by the driver software through PCI9030 GPIO pins.

The configuration EEPROM of the PCI controller can also be modified by the driver software, to adapt address spaces etc.

User applications can be developed using the design software ISE WebPACK which can be downloaded free of charge from www.xilinx.com.
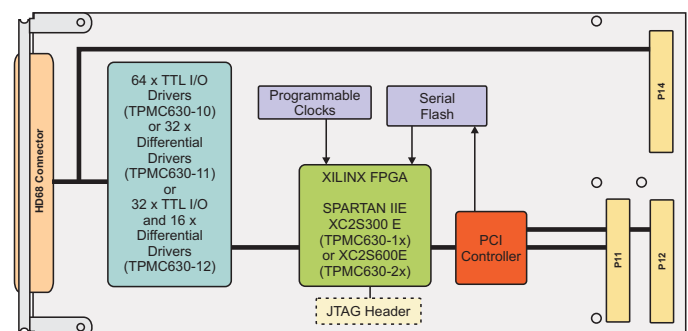
The TPMC630 provides front panel I/O via a HD68 SCSI-3 type connector and rear panel I/O via P14.

For First Time Users the Engineering Documentation TPMC630-ED is recommended. The Engineering Documentation includes TPMC630-DOC, schematics, data sheets / application notes of the components and well documented sample VHDL source code.

Software Support (TPMC630-SW-xx) for different operating systems is available.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- PCI 2.1 compliant interface
- 3.3V and 5V PCI Signaling Voltage
- Board size: 149 mm x 74 mm
- TPMC630-1x: Xilinx XC2S300E-6 Spartan-IIE FPGA configured by serial Flash XCF02S
  TPMC630-2x: Xilinx XC2S600E-6 Spartan-IIE FPGA configured by serial Flash XCF04S
- Flash device in-system programmable
- 32 bit PCI target interface by PLX PCI9030
- FPGA clock options:
  - Local clock oscillator
  - PLL programmable clock generator (200 KHz – 166 MHz), 6 clock outputs connected to FPGA
- I/O lines
  - 64 TTL I/O (-10), 32 differential I/O (-11) or 32 TTL I/O and 16 differential I/O (-12)
  - TTL signaling voltage (maximum current: +/-32mA) or EIA-422/-485 signaling level
  - direction individually programmable
- I/O access:
  64 I/O lines on HD68 front connector, parallel to up to 64 I/O lines on rear connector P14
- Operating temperature: -40°C to +85°C

Order Information

RoHS Compliant

TPMC630-10R 64 TTL Inputs/Outputs, XC2S300E-6 Spartan-IIE FPGA

TPMC630-11R 32 Differential Inputs/Outputs, XC2S300E-6 Spartan-IIE FPGA

TPMC630-12R 32 TTL Inputs/Outputs and 16 Differential Inputs/Outputs, XC2S300E-6 Spartan-IIE FPGA

TPMC630-20R 64 TTL Inputs/Outputs, XC2S600E-6 Spartan-IIE FPGA

TPMC630-21R 32 Differential Inputs/Outputs, XC2S600E-6 Spartan-IIE FPGA

TPMC630-22R 32 TTL Inputs/Outputs and 16 Differential Inputs/Outputs, XC2S600E-6 Spartan-IIE FPGA

None RoHS Compliant

TPMC630-10 None RoHS compliant version of TPMC630-10R

TPMC630-11 None RoHS compliant version of TPMC630-11R

TPMC630-12 None RoHS compliant version of TPMC630-12R

TPMC630-20 None RoHS compliant version of TPMC630-20R

TPMC630-21 None RoHS compliant version of TPMC630-21R

TPMC630-22 None RoHS compliant version of TPMC630-22R

Documentation

TPMC630-DOC User Manual

TPMC630-ED Engineering Documentation, includes TPMC630-DOC

Software

TDRV004-SW-25 Integrity Software Support

TDRV004-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

TDRV004-SW-65 Windows XP/XPE/2000 Software Support

TDRV004-SW-72 LynxOS Software Support

TDRV004-SW-82 LiNUX Software Support

TDRV004-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

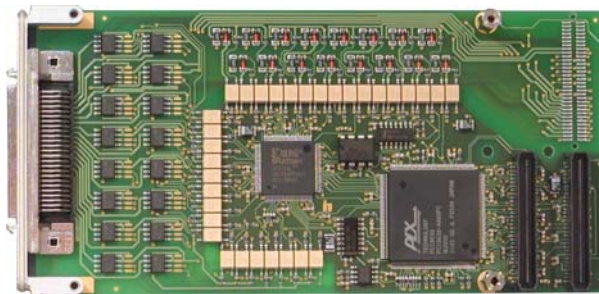**TA304** Cable Kit for modules with HD68 SCSI-3 type connector

TPIM003 PIM I/O Module with HD68 SCSI-3 type connector and special pin assignment

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TPMC670 16/8 Digital Inputs (24V) 16/8 Digital Outputs (24V, 0.5A)

Application Information

The TPMC670 is a standard single-width 32 bit PMC with 16 / 8 24V digital inputs galvanically isolated from the computer system by optocoupler. The inputs are also potential free to each other in groups of four inputs. A high performance input circuit ensures a defined switching point and polarization protection against confusing the pole. All inputs have a common electronic debounce circuit with a freely programmable debounce time. All inputs can generate an interrupt. The signal edge handling is programmable to interrupt on rising, falling or both edges of the input signal.
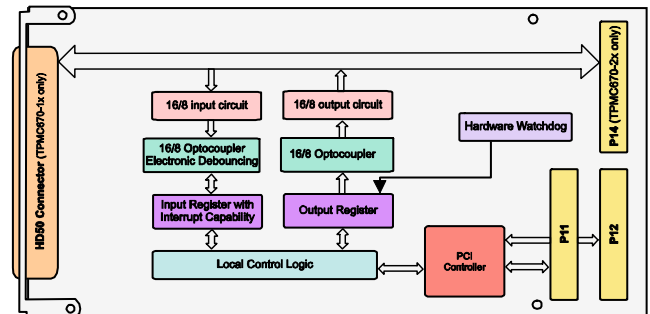
The TPMC670 has 16 / 8 digital high side switches with galvanic isolation from the computer system by optocoupler. The outputs are also isolated against each other in groups of four outputs. All outputs are protected against short-circuit and thermal overload. The output drivers are capable of driving 0.5A continuous per channel. A hardware watchdog clears all outputs in case of trigger fail. The TPMC670-1x provides front panel I/O, the TPMC670-2x provides P14 I/O.

For First Time Users the Engineering Documentation TPMC670-ED is recommended. The Engineering Documentation includes TPMC670-DOC, schematics and data sheets. Software Support (TDRV003-SW-xx) for different operating systems is available.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- PCI 2.1 compliant interface
- 3.3V and 5V PCI Signaling Voltage
- Board size: 149 mm x 74 mm
- 16 / 8 interrupt generating digital inputs
- 24 V signal voltage for inputs
- Optocoupler for galvanic isolation
- All inputs isolated to each other in groups of four inputs
- Programmable electronic debounce circuit (7µs to 440ms in steps of 7µs),
- 16 / 8 digital outputs, high side switches
- 24V signal voltage, current per output 0.5A
- Optocoupler for galvanic isolation
- Outputs are short-circuit protected
- Outputs are isolated to each other in groups of four outputs
- Outputs protected against thermal overload
- Watchdog timer resets all channels in case of trigger failure

Order Information

RoHS Compliant

TPMC670-10R 16 Digital Inputs, 16 Digital Outputs, front panel I/O

TPMC670-11R 8 Digital Inputs, 8 Digital Outputs, front panel I/O

TPMC670-20R 16 Digital Inputs, 16 Digital Outputs, P14 I/O

TPMC670-21R 8 Digital Inputs, 8 Digital Outputs, P14 I/O

None RoHS Compliant

TPMC670-10 None RoHS compliant version of TPMC670-10R

TPMC670-11 None RoHS compliant version of TPMC670-11R

TPMC670-20 None RoHS compliant version of TPMC670-20R

TPMC670-21 None RoHS compliant version of TPMC670-21R

Documentation

TPMC670-DOC User Manual

TPMC670-ED Engineering Documentation, includes TPMC670-DOC

Software

TDRV003-SW-25 Integrity Software Support

TDRV003-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

TDRV003-SW-65 Windows XP/XPE/2000 Software Support

TDRV003-SW-72 LynxOS Software Support

TDRV003-SW-82 LiNUX Software Support

TDRV003-SW-95 QNX 6 Software Support
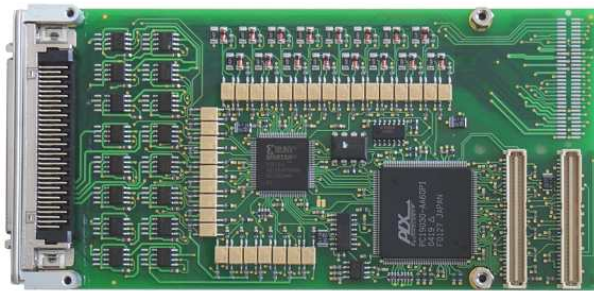
For other operating systems please contact TEWS.

Related Products

TA301 Cable Kit for modules with HD50 Connector

TPIM001 PIM I/O Module with HD50 SCSI-2 type connector

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TPMC671 16 Digital Inputs (24V) 16 Digital Outputs (24V, 0.5A)

Application Information

The TPMC671 is a standard single-width 32 bit PMC with 16 24V digital inputs galvanically isolated from the computer system by optocoupler. The inputs are also potential free to each other. A high performance input circuit ensures a defined switching point and polarization protection against confusing the pole. All inputs have a common electronic debounce circuit with a freely programmable debounce time. All inputs can generate an interrupt. The signal edge handling is programmable to interrupt on rising, falling or both edges of the input signal.
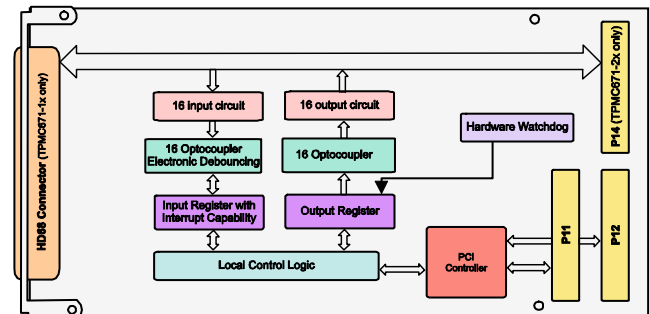
The TPMC671 has 16 digital high side or low side switches (build option) with galvanic isolation from the computer system by optocoupler. The outputs are also isolated against each other in groups of four outputs. All outputs are protected against short-circuit and thermal overload. The output drivers are capable of driving 0.5A continuous per channel. A hardware watchdog clears all outputs in case of trigger fail. The TPMC671-1x provides front panel I/O, the TPMC671-2x provides P14 I/O.

For First Time Users the Engineering Documentation TPMC671-ED is recommended. The Engineering Documentation includes TPMC671-DOC, schematics and data sheets. Software Support (TPMC671-SW-xx) for different operating systems is available.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to   IEEE P1386.1
- ❍ PCI 2.1 compliant interface
- ❍ 3.3V and 5V PCI Signaling Voltage
- ❍ Board size: 149 mm x 74 mm
- ❍ 16 interrupt generating digital inputs
- ❍ 24 V signal voltage for inputs
- ❍ Optocoupler for galvanic isolation
- ❍ All inputs isolated to each other
- ❍ Programmable electronic debounce circuit (7µs to 440ms in steps of 7µs),
- ❍ 16 digital outputs, high side or low side switches (build option)
- ❍ 24V signal voltage, current per output 0.5A
- ❍ Optocoupler for galvanic isolation
- ❍ Outputs are short-circuit protected
- ❍ Outputs are isolated to each other in groups of four
- ❍ Outputs are protected against thermal overload
- ❍ Watchdog timer resets all channels in case of trigger failure

Order Information

RoHS Compliant

TPMC671-10R	16 Digital Inputs, 16 Digital High Side Switch Outputs, front panel I/O
TPMC671-11R	16 Digital Inputs, 16 Digital Low Side Switch Outputs, front panel I/O
TPMC671-20R	16 Digital Inputs, 16 Digital High Side Switch Outputs, P14 I/O
TPMC671-21R	16 Digital Inputs, 16 Digital Low Side Switch Outputs, P14 I/O

None RoHS Compliant

TPMC671-10	None RoHS compliant version of TPMC671-10R
TPMC671-11	None RoHS compliant version of TPMC671-11R
TPMC671-20	None RoHS compliant version of TPMC671-20R
TPMC671-21	None RoHS compliant version of TPMC671-21R

Documentation

TPMC671-DOC	User Manual
TPMC671-ED	Engineering Documentation, includes TPMC671-DOC

Software

TDRV003-SW-25	Integrity Software Support
TDRV003-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV003-SW-65	Windows XP/XPE/2000 Software Support
TDRV003-SW-72	LynxOS Software Support
TDRV003-SW-82	LiNUX Software Support
TDRV003-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
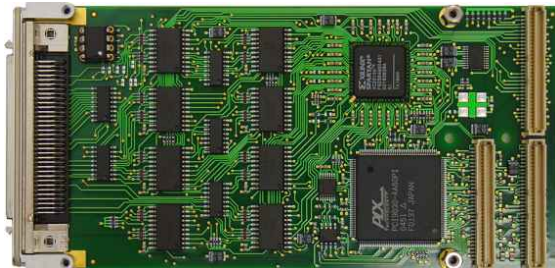
TA304	Cable Kit for modules with HD68 Connector
TPIM002	PIM I/O Module with HD68 SCSI-2 type connector

TPMC680   8 x 8 Bit Digital Inputs/Outputs (5V TTL)

Application Information

The TPMC680 is a standard single-width 32 bit PMC module offering 64 bit of TTL I/O arranged in 8 x 8 bit ports. Direction of the I/O lines is software programmable for each of the 8 bit ports. Each 8 bit port is built up using a TTL bus transceiver. Each line is protected against ESD and overvoltage.

Each input can generate an interrupt. Signal edge handling is programmable to interrupt on rising and/or falling edge of the input signal. Interrupts can be enabled and disabled for each bit. For interrupt source detection the status of each bit can be read from the interrupt status register.

The TPMC680 supports three basic modes of operation: standard byte I/O with interrupts, 2 x 16 bit port with handshake and 1 x 32 bit port with handshake. The two handshake modes offer double buffered inputs or outputs and interlocked or pulsed handshake output protocol.

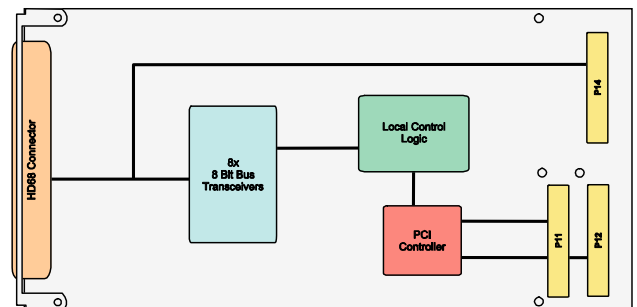In byte I/O mode it is possible to read or write synchronously all 64 lines.

The TPMC680 provides front panel I/O via a HD68 SCSI-3 type connector and rear panel I/O via P14.

For First Time Users the Engineering Documentation TPMC680-ED is recommended. The Engineering Documentation includes TPMC680-DOC, schematics and data sheets.

Software Support (TPMC680-SW-xx) for different operating systems is available.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- ❍ PCI 2.1 compliant interface
- ❍ 3.3V and 5V PCI Signaling Voltage
- ❍ Board size: 149 mm x 74 mm
- ❍ Interrupt generating digital I/O lines
  - ❍ TTL I/O's arranged in 8 x 8 bit ports
  - ❍ Direction programmable per 8 bit port
  - ❍ TTL signaling voltage (maximum current: ±16mA)
- ❍ ESD and overvoltage protection for each I/O line
- ❍ I/O access:
  - 64 I/O lines on HD68 front connector, parallel to
  - 56 I/O lines [55:0] and system ground on rear connector P14; changeable to up to 64 I/O lines without ground
- ❍ Basic operating modes: Byte I/O and two handshake modes
- ❍ Temperature range: -40°C to +85°C

Order Information

RoHS Compliant
TPMC680-10R   8 x 8 Bit Digital Inputs/Outputs

None RoHS Compliant
TPMC680-10   None RoHS compliant version of
TPMC680-10R

Documentation
TPMC680-DOC   User Manual
TPMC680-ED   Engineering Documentation, includes
TPMC680-DOC

Software
TPMC680-SW-25   Integrity Software Support
TPMC680-SW-42   VxWorks Software Support
(Legacy and VxBus-Enabled
Software Support)
TPMC680-SW-65   Windows XP/XPE/2000 Software
Support
TPMC680-SW-72   LynxOS Software Support
TPMC680-SW-82   LiNUX Software Support
TPMC680-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
TA304   Cable Kit for modules with HD68
connector
TPIM002   PIM I/O Module with HD68 SCSI-3
type connector

TPMC681   64 Digital Inputs/Outputs (Bit I/O)

Application Information

The TPMC681 is a standard single-width 32 bit PMC module offering 64 ESD-protected TTL I/Os. Each line is individually programmable as input, output or tri-state. The receivers are always enabled, which allows determining the state of each I/O line at any time. This can be used as read back function for lines configured as outputs. Each TTL I/O line has a pull-up resistor. The pull-up voltage is selectable to be either +3.3V or +5V.

Each input can generate an interrupt. Signal edge handling is programmable to interrupt on rising and/or falling edge of an input signal. Interrupts can be enabled and disabled for each bit. For interrupt source detection the status of each bit can be read from interrupt status registers.
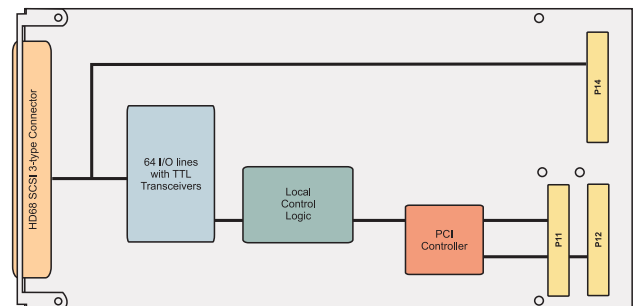
The TPMC681 provides front panel I/O via a HD68 SCSI-3 type connector and rear panel I/O via P14.

For First Time Users the Engineering Documentation TPMC681-ED is recommended. The Engineering Documentation includes TPMC681-DOC, schematics and data sheets.

Software Support (TDRV006-SW-xx) for different operating systems is available.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- PCI 2.1 compliant interface
- 3.3V and 5V PCI Signaling Voltage
- Board size: 149 mm x 74 mm
- 64 interrupt generating digital I/O lines
  - 64 TTL I/Os
  - Direction individually programmable per line
  - TTL signaling voltage (maximum current: +/-24mA)
- ESD and overvoltage protection for each I/O line
- I/O access:
  64 I/O lines on HD68 front connector,
  parallel to up to 64 I/O lines on rear connector P14
   (upper 8 lines changeable to system ground)
- Temperature range: -40°C to +85°C

Order Information

RoHS Compliant
TPMC681-10R 64 Digital Inputs/Outputs

None RoHS Compliant
TPMC681-10 None RoHS compliant version of
      TPMC681-10R

Documentation
TPMC681-DOC User Manual
TPMC681-ED Engineering Documentation, includes
      TPMC681-DOC

Software
TDRV006-SW-25 Integrity Software Support
TDRV006-SW-42 VxWorks Software Support
       (Legacy and VxBus-Enabled Software
       Support)
TDRV006-SW-65 Windows XP/XPE/2000 Software
       Support
TDRV006-SW-72 LynxOS Software Support
TDRV006-SW-82 LiNUX Software Support
TDRV006-SW-95 QNX 6 Software Support
For other operating systems please contact TEWS.

Related Products
TA304   Cable Kit for modules with HD68
      SCSI-3 connector
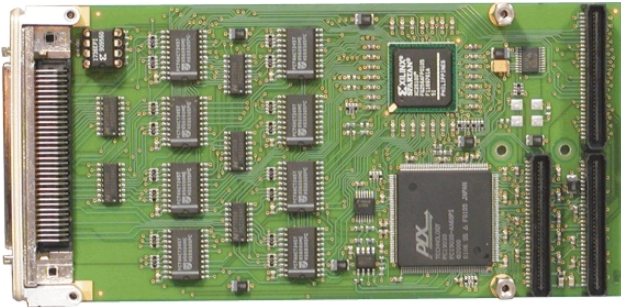**TPIM003**   PIM I/O Module with HD68 SCSI-3
      type connector

TPMC682   3 x 16 bit I/O Ports with 512 Word FIFO and Handshake

Application Information

The TPMC682 is a standard single-width 32 bit PMC with three 16 bit TTL digital input/output lines controlled by handshake signals. These handshake signals run over an additional 8 bit input and an 8 bit output port. Interlocked or pulsed handshake protocol is provided. Each I/O port has a 512 words deep FIFO. All I/O lines are protected by bus transceivers and ESD protection devices.

The PLX PCI9030 PCI target chip is used for the PCI interface.

An interrupt can be generated on INTA, when the filling level of a FIFO exceeds the value of the individually programmable threshold. Each port has a programmable timeout counter for input direction of data.
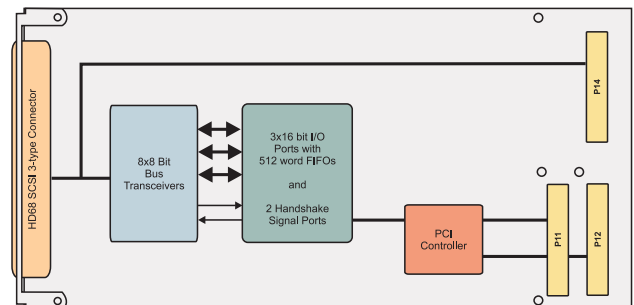

The TPMC682 provides front panel I/O via a HD68 SCSI-3 type connector and rear panel I/O via P14.

For First Time Users the Engineering Documentation TPMC682-ED is recommended. The Engineering Documentation includes TPMC682-DOC, schematics and data sheets.

Software Support (TDRV008-SW-xx) for different operating systems is available.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- ❍ PCI 2.1 compliant interface
- ❍ 3.3V and 5V PCI Signaling Voltage
- ❍ Board size: 149 mm x 74 mm
- ❍ Digital Input/Output Ports
  - ❍ TTL I/O's arranged in 3 x 16 bit ports and 2 x 8 bit ports for handshake signals and for general purpose
  - ❍ 512 word FIFO for each I/O port
  - ❍ individually programmable FIFO thresholds
  - ❍ programmable timeout for reading
  - ❍ Direction programmable per 16 bit port
  - ❍ TTL signaling voltage (maximum current: +/-8mA)
- ❍ ESD and overvoltage protection for each I/O line
- ❍ I/O access:
  - 64 I/O lines on HD68 front connector, parallel to
  - 56 I/O lines (Port 0/1 [15:0], Port 2 [7:0]) and system ground on rear connector P14; changeable to 64 I/O lines (Port 0/1/2 [15:0]) without ground
- ❍ Temperature range: -40°C to +85°C

Order Information

RoHS Compliant
TPMC682-10R   Three 16 bit Digital Input/Output Ports

None RoHS Compliant
TPMC682-10   None RoHS compliant version of TPMC682-10R

Documentation
TPMC682-DOC   User Manual
TPMC682-ED   Engineering Documentation, includes TPMC682-DOC

Software
TDRV008-SW-25   Integrity Software Support
TDRV008-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV008-SW-65   Windows XP/XPE/2000 Software Support
TDRV008-SW-72   LynxOS Software Support
TDRV008-SW-82   LiNUX Software Support
TDRV008-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.
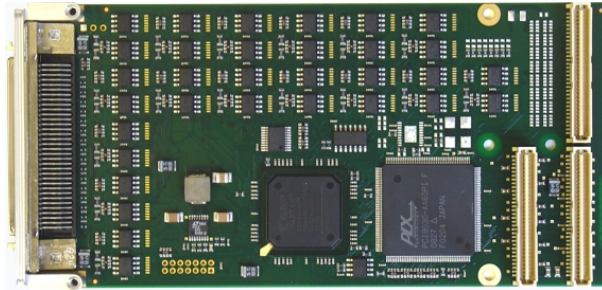
Related Products
TA304   Cable Kit for modules with HD68 connector
TPIM002   PIM I/O Module with HD68 SCSI-3 type connector

TPMC683 32 RS422/RS485 Differential I/O

Application Information

The TPMC683 is a standard single-width 32 bit PMC module offering 32 differential I/O lines using EIA-422 / EIA-485 compatible, ESD-protected line transceivers.
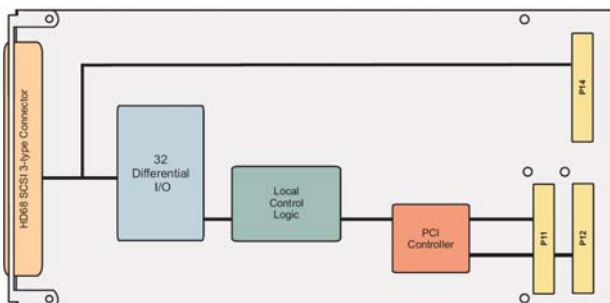

Each line is individually programmable as input or output. The receivers are always enabled, which allows determining the state of each I/O line at any time. This can be used as read back function for lines configured as outputs.

Each input can generate an interrupt. Signal edge handling is programmable to interrupt on rising and/or falling edge of an input signal. Interrupts can be enabled and disabled for each bit. For interrupt source detection, the status of each line can be read from interrupt status registers.

The TPMC683 provides front panel I/O via a HD68 SCSI-3 type connector and rear panel I/O via P14.

For First-Time-Buyers the engineering documentation TPMC683-ED is recommended. The engineering documentation includes TPMC683-DOC, schematics and data sheets of TPMC683.

Technical Information

- ❍ Form Factor: Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - ❍ Board size: 149 mm x 74 mm
  - ❍ PCI 2.1 compliant interface
  - ❍ 3.3V and 5V PCI Signaling Voltage
- ❍ Interrupt generating differential I/O lines
  - ❍ 32 differential I/Os
  - ❍ EIA-422/-485 signaling level
  - ❍ Direction individually programmable per line
  - ❍ 120Ω termination resistor
  - ❍ 15kV ESD protection
- ❍ I/O access:
  32 I/O lines on HD68 front connector, parallel to up to 32 I/O lines on rear connector P14
- ❍ Operating temperature -40°C to +85°C
- ❍ MTBF (MIL-HDBK217F/FN2 G_B 20°C)
  TPMC683-10: 451000 h

Order Information

RoHS Compliant
TPMC683-10R 32 RS422/RS485 Differential I/O

None RoHS Compliant
TPMC683-10 None RoHS compliant version of TPMC683-10R

Documentation
TPMC683-DOC User Manual
TPMC683-ED Engineering documentation (TPMC683-DOC, Schematics, Assembly Drawing, Data Sheets)

Software
TDRV012-SW-25 Integrity Software Support
TDRV012-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV012-SW-65 Windows XP/XPE/2000 Software Support
TDRV012-SW-72 LynxOS Software Support
TDRV012-SW-82 LiNUX Software Support
TDRV012-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
TA304 Cable Kit for modules with HD68 SCSI-3 type connector
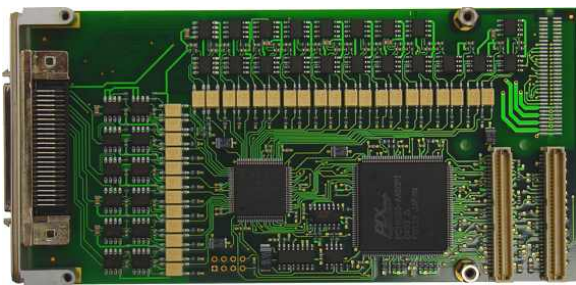**TPIM003** PIM I/O Module with HD68 SCSI-3 type connector and special pin assignment.

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TPMC700   32 / 16 Digital Outputs (24V, 0.5A) High Side Switches

Application Information

The PMC compatible module TPMC700 has 32 (16) digital outputs with galvanic isolation via optocouplers. All outputs resist short-circuits and are protected against thermal overload. The output drivers are capable of driving 0.5A continuous per channel as high side switch. A hardware watchdog clears all outputs in case of trigger failure.

The TPMC700-1x provides front panel I/O with a HD50 SCSI-2 type connector, the TPMC700-2x provides P14 I/O.
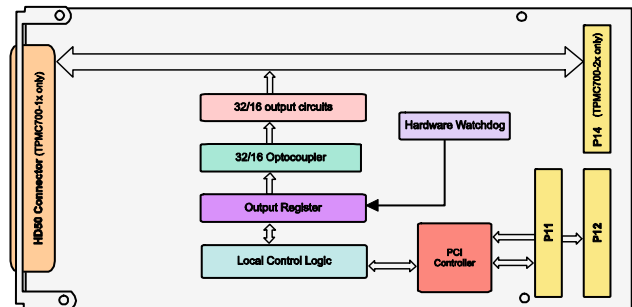

For First Time Users the Engineering Documentation TPMC700-ED is recommended. The Engineering Documentation includes TPMC700-DOC, schematics and data sheets.

Software Support (TPMC700-SW-xx) is available for different operating systems.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- ❍ PCI 2.1 compliant interface
- ❍ Board size: 149 mm x 74 mm
- ❍ 32 / 16 digital outputs, high side switches
- ❍ 24 V signal voltage, current per output 0.5A
- ❍ Optocoupler for galvanic isolation
- ❍ Outputs are short-circuit protected
- ❍ Outputs are isolated by optocouplers from the system and in two groups against each other
- ❍ Outputs are protected against thermal overload
- ❍ Watchdog timer resets all channels in case of trigger failure

Order Information

RoHS Compliant

TPMC700-10R	32 Digital Outputs, front panel I/O
TPMC700-11R	16 Digital Outputs, front panel I/O
TPMC700-20R	32 Digital Outputs, P14 I/O
TPMC700-21R	16 Digital Outputs, P14 I/O

None RoHS Compliant

TPMC700-10	None RoHS compliant version of TPMC700-10R
TPMC700-11	None RoHS compliant version of TPMC700-11R
TPMC700-20	None RoHS compliant version of TPMC700-20R
TPMC700-21	None RoHS compliant version of TPMC700-21R

Documentation

TPMC700-DOC	User Manual
TPMC700-ED	Engineering Documentation, includes TPMC700-DOC

Software

TPMC700-SW-25	Integrity Software Support
TPMC700-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC700-SW-65	Windows XP/XPE/2000 Software Support
TPMC700-SW-72	LynxOS Software Support
TPMC700-SW-82	LiNUX Software Support
TPMC700-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA301	Cable Kit for modules with HD50 SCSI-2 type connector
TPIM001	PIM I/O Module with HD50 SCSI-2 type connector

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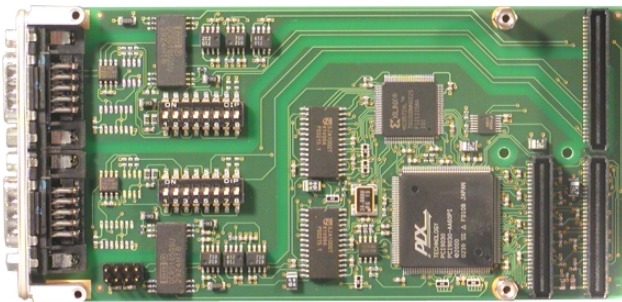e-mail: info@tews.com   www.tews.com

TPMC810 Isolated 2 x CAN Bus

Application Information

The TPMC810 is a standard single-width 32 bit PMC with two independent CAN bus channels, isolated from system logic and from each other.

Two Philips SJA1000 CAN controllers (CAN specification 2.0B supported) are used.

CAN High Speed transceivers are used for the CAN bus I/O interface. An on board termination option (DIP switches) is provided for each CAN bus channel allowing to configure on board termination and pass through mode.

Each channel can generate an interrupt on INTA. Interrupts can be enabled and disabled separately.
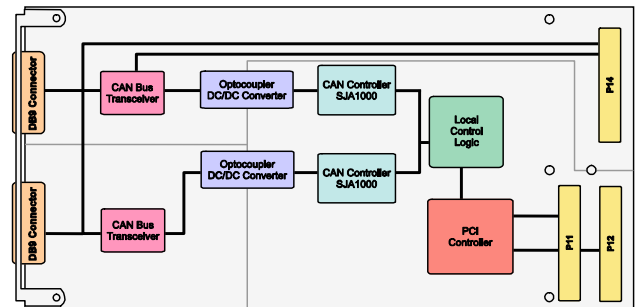
The TPMC810 provides front panel I/O via two DB9 male connectors and rear panel I/O via P14.

For First Time Users the Engineering Documentation TPMC810-ED is recommended. The Engineering Documentation includes TPMC810-DOC, schematics and data sheets.

Software support (TDRV010-SW-xx) for different operating systems is available.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- ❍ PCI 2.1 compliant interface
- ❍ 3.3V and 5V PCI Signaling Voltage
- ❍ Board size: 147 mm x 74 mm
- ❍ Two CAN bus interfaces based on Philips SJA1000
- ❍ I/O access:
  DB9 male front connectors with pinout following CiA DS-102, parallel to rear connector P14
- ❍ Physical interface: CAN High Speed (according to ISO 11898-2)
- ❍ Physical interface optically isolated from CAN controller by on board DC/DC converters and optocouplers for each channel
- ❍ Transfer rate 1 Mbit/s maximum (bus length up to 30 m)
- ❍ Temperature range: -40°C to +85°C

10/2009

Order Information

RoHS Compliant
TPMC810-10R   Two isolated CAN bus channels

None RoHS Compliant
TPMC810-10   None RoHS compliant version of TPMC810-10R

Documentation
TPMC810-DOC   User Manual
TPMC810-ED   Engineering Documentation, includes TPMC810-DOC

Software
TDRV010-SW-25 Integrity Software Support
TDRV010-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV010-SW-65 Windows XP/XPE/2000 Software Support
TDRV010-SW-72 LynxOS Software Support
TDRV010-SW-82 LiNUX Software Support
TDRV010-SW-95 QNX 6 Software Support

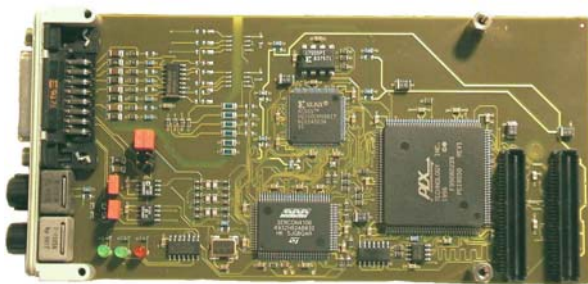For other operating systems please contact TEWS.

Related Products
TPIM001   PIM I/O Module with HD50 SCSI-2 type connector

TPMC812   SERCOS Controller with Two Hand Wheel Interfaces
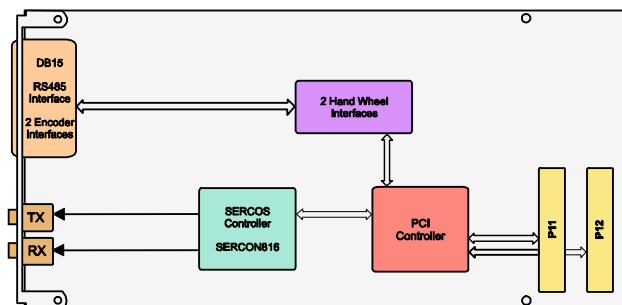
Application Information

The TPMC812 is a standard single-width 32 bit PMC module with a complete SERCOS bus interface using the SERCON816 SERCOS Controller in SERCON410B Compatible Mode. The physical interface supports RS485 on board as well as optical fiber ring.

In addition the TPMC812 offers two encoder interface ports to provide hand wheel functionality. The encoder interface supports RS422 and TTL signal levels.

For First Time Users the Engineering Documentation TPMC812-ED is recommended. The Engineering Documentation includes TPMC812-DOC, schematics and data sheets.

Software support (TPMC812-SW-xx) for different operating systems is available.

Technical Information

❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
❍ PCI 2.1 compliant interface
❍ 3.3V and 5V PCI Signaling Voltage
❍ Board size: 149 mm x 74 mm
❍ SERCOS interface based on SERCON816 chip (SERCON410B Compatible Mode only)
❍ Single chip controller for SERCOS interface
❍ Dual Port RAM 1024 words x 16 bit addressable
❍ Transmission rate up to 4 Mbaud with internal clock recovery
❍ Internal repeater for ring connections
❍ Full duplex operation
❍ Physical interface optical fiber ring or RS485
❍ Two encoder interface ports (RS422 or TTL input) for hand wheel functionality

Order Information

RoHS Compliant

TPMC812-10R	SERCOS Controller
TPMC812-11R	Same as TPMC812-10R but optically isolated encoder interface

None RoHS Compliant

TPMC812-10	None RoHS compliant version of TPMC812-10R
TPMC812-11	None RoHS compliant version of TPMC812-11R

Documentation

TPMC812-DOC	User Manual
TPMC812-ED	Engineering Documentation, includes TPMC812-DOC

Software

TPMC812-SW-25	Integrity Software Support
TPMC812-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC812-SW-65	Windows XP/XPE/2000 Software Support
TPMC812-SW-72	LynxOS Software Support
TPMC812-SW-82	LiNUX Software Support
TPMC812-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

The Embedded I/O Company

TPMC813 LON Interface with Neuron Chip 3150

Application Information

The TPMC813 is a standard single-width 32 bit PMC module providing a complete LON interface using the Neuron chip 3150. The communication is executed via a 4 Kbytes Dual Port RAM. A 32 Kbytes EPROM is used to store the protocol firmware of the Neuron chip 3150 and the application program.

Four kinds of on board physical interface are available: the TPMC813-1x supports standard RS485, the TPMC813-20x provides transformer coupled 1.25 Mbit interface, the TPMC813-21x supports transformer coupled 78 Kbit interface and the TPMC813-3x provides the free topology twisted pair interface based on the ECHELON FTT-10A transceiver.
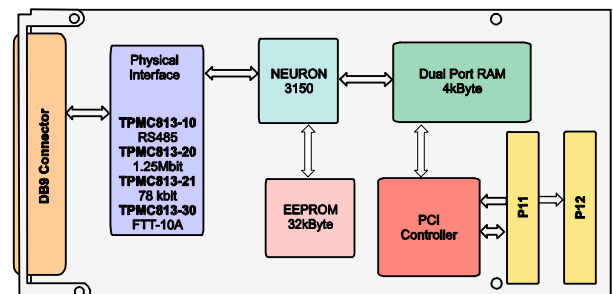

For First Time Users the Engineering Documentation TPMC813-ED is recommended. The Engineering Documentation includes TPMC813-DOC, schematics and data sheets.

Software Support (TPMC813-SW-xx) for different operating systems is available.

Technical Information

❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
❍ PCI 2.1 compliant interface
❍ Board size: 149 mm x 74 mm
❍ LON interface based on Neuron chip 3150
❍ 4 Kbytes Dual Port RAM
❍ 32 Kbytes EPROM for protocol firmware and application
❍ Physical interface RS485 transceiver or transformer coupled (1.25 Mbit or 78 Kbit) and FTT-10A transceiver
❍ Complete network communication port of the neuron chip available at front panel
❍ MIP / DPR license included

Order Information

RoHS Compliant

TPMC813-10R   LON Interface RS485
TPMC813-20R   LON Interface, 1.25 Mbit,
                   transformer coupled
TPMC813-21R   LON Interface, 78 kBit, transformer
                   coupled
TPMC813-30R   LON Interface, FTT-10A Transceiver

None RoHS Compliant

TPMC813-10   None RoHS compliant version of
              TPMC813-10R
TPMC813-20   None RoHS compliant version of
              TPMC813-20R
TPMC813-21   None RoHS compliant version of
              TPMC813-21R
TPMC813-30   None RoHS compliant version of
              TPMC813-30R

Documentation

TPMC813-DOC   User Manual
TPMC813-ED   Engineering Documentation, includes
                   TPMC813-DOC

Software

TPMC813-SW-25   Integrity Software Support
TPMC813-SW-42   VxWorks Software Support
                     (Legacy and VxBus-Enabled
                     Software Support)
TPMC813-SW-65   Windows XP/XPE/2000 Software
                     Support
TPMC813-SW-72   LynxOS Software Support
TPMC813-SW-82   LiNUX Software Support
TPMC813-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

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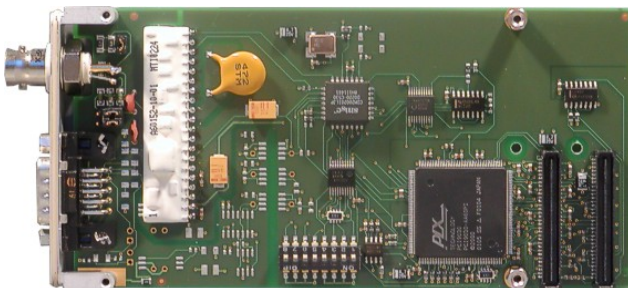e-mail: info@tews.com   www.tews.com

TPMC815   ARCNET Controller

Application Information

The TPMC815 is a standard single-width 32 bit PMC module with a complete ARCNET interface using the controller COM20020. The COM20020 contains the ARCNET controller with transceiver and Dual Port RAM. Various network topologies are supported (Star, Tree, Bus).

Two interface types of the TPMC815 are available. The TPMC815-11x offers the traditional isolated hybrid interface and the TPMC815-21x supports an isolated RS485 differential driver interface.
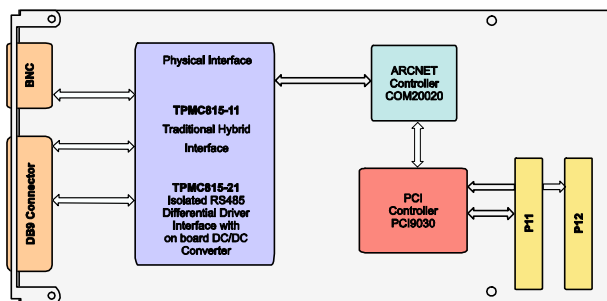
The maximum speed of the TPMC815-11x is 2.5 Mbps. The maximum speed of the TPMC815-21x is 5.0 Mbps. The module is ideal suited for industrial / factory automation and automotive applications.

TPMC815-11R

For First Time Users the Engineering Documentation TPMC815-ED is recommended. The Engineering Documentation includes TPMC815-DOC, schematics and data sheets.

Software support (TDRV007-SW-xx) is available for different operating systems.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- ❍ PCI 2.1 compliant interface
- ❍ Board size: 149 mm x 74 mm
- ❍ ARCNET Interface based on COM20020
- ❍ Complete ARCNET controller with transceiver and Dual Port RAM
- ❍ Ideal for industrial / factory automation and automotive applications
- ❍ Deterministic 2.5 Mbps (TPMC815-11x) or 5 Mbps (TPMC815-21x) Token Passing Protocol
- ❍ Improved diagnostics
- ❍ Flexible media interface
- ❍ Supports various network topologies (star, tree, bus)
- ❍ Physical interface
- ❍ Traditional hybrid interface (isolated) for long distances
- ❍ Isolated RS485 differential driver interface with on board DC/DC converter

Order Information

RoHS Compliant

TPMC815-11R	ARCNET Controller 2.5 Mbps, Traditional Hybrid Interface
TPMC815-21R	ARCNET Controller 5 Mbps, Isolated RS485 Interface

None RoHS Compliant

TPMC815-11	None RoHS compliant version of TPMC815-11R
TPMC815-21	None RoHS compliant version of TPMC815-21R

Documentation

TPMC815-DOC	User Manual
TPMC815-ED	Engineering Documentation, includes TPMC815-DOC

Software

TDRV007-SW-25	Integrity Software Support
TDRV007-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV007-SW-65	Windows XP/XPE/2000 Software Support
TDRV007-SW-72	LynxOS Software Support
TDRV007-SW-82	LiNUX Software Support
TDRV007-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.
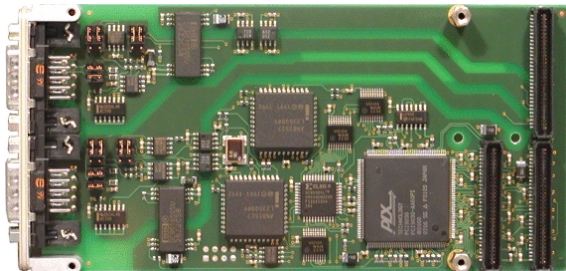
The Embedded I/O Company

TPMC816   Two Independent Channels Extended CAN Bus

Application Information

The TPMC816 is a standard single-width 32 bit PMC module with two complete CAN bus interfaces using two Intel 82527 CAN controllers. Both channels are completely independent and support CAN specification 2.0 part A and B (Standard 11 bit identifier and extended 29 bit identifier).

Each channel provides CAN High Speed and modified RS485 as physical interface. The physical interfaces are optically isolated from the CAN controller and powered by an on board DC/DC converter for each channel. The TPMC816-11 provides one CAN bus channel.
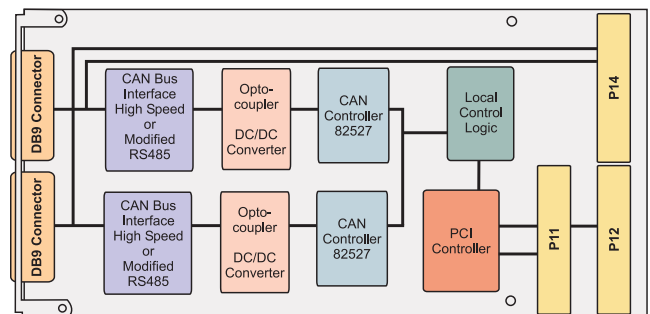
For First Time Users the Engineering Documentation TPMC816-ED is recommended. The Engineering Documentation includes TPMC816-DOC, schematics and data sheets.

Software Support (TDRV011-SW-xx) for different operating systems is available.

Technical Information

❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
❍ PCI 2.1 compliant interface
❍ 3.3V and 5V PCI Signaling Voltage
❍ Board size: 149 mm x 74 mm
❍ CAN bus interface based on Intel 82527 chip
❍ I/O access :
   DB9 male front connector with pinout following CiA DS-102, parallel to rear connector P14
❍ Support CAN specification 2.0 part A and B (standard and extended data frames)
❍ Programmable global mask
❍ 15 message objects of 8 byte data length
❍ Powerful error handling
❍ Programmable transfer rates
❍ Physical interface CAN High Speed (according to ISO 11 898) and modified RS485 per channel
❍ Physical interface optically isolated from CAN controller by on board DC/DC converter per channel
❍ Maximum transfer rate 1 Mbit/s (bus length up to 40 m)
❍ Operating temperature -40°C to +85°C

Order Information

RoHS Compliant
TPMC816-10R   Two Independent CAN Bus Channels
TPMC816-11R   One CAN Bus Channel

None RoHS Compliant
TPMC816-10   None RoHS compliant version of
TPMC816-10R

TPMC816-11   None RoHS compliant version of
TPMC816-11R

Documentation
TPMC816-DOC   User Manual
TPMC816-ED   Engineering Documentation, includes
TPMC816-DOC

Software
TDRV011-SW-25   Integrity Software Support
TDRV011-SW-42   VxWorks Software Support
(Legacy and VxBus-Enabled Software
Support)
TDRV011-SW-65   Windows XP/XPE/2000 Software
Support
TDRV011-SW-72   LynxOS Software Support
TDRV011-SW-82   LiNUX Software Support
TDRV011-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
TPIM001   PIM I/O Module with HD50 SCSI-2 type
connector

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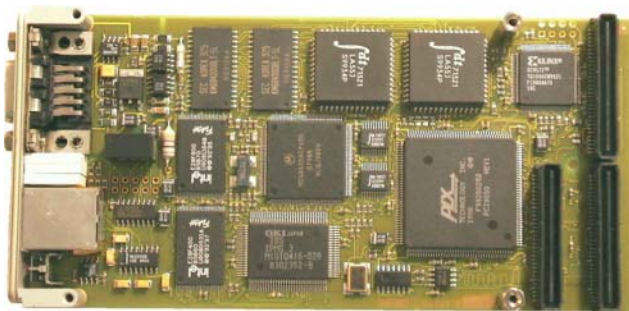e-mail: info@tews.com   www.tews.com

TPMC821   Interbus-Master Interface Generation 4 (G4)

Application Information

The TPMC821 is a standard single-width 32 bit PMC module and offers a complete PMC INTERBUS Master Generation 4 (G4) Interface. A MC68332 local controller and the IPMS3 INTERBUS protocol controller are used as controlling units on board of the TPMC821.
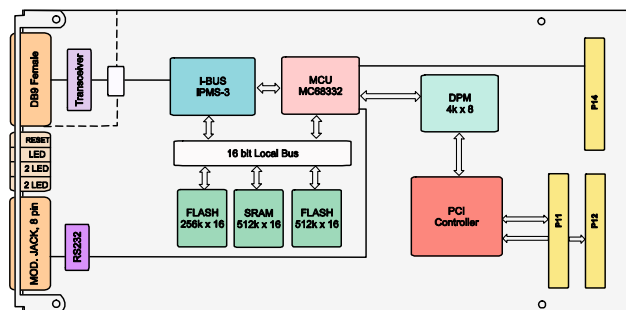
The communication between the host CPU and the TPMC821 is handled via a 4 Kbyte Dual Port Memory. The on board firmware running on the MC68332 is the original INTERBUS Master Generation 4 (G4) firmware from Phoenix Contact.

Furthermore the TPMC821 provides a RS232 diagnostic port, the optically isolated INTERBUS interface and status LEDs.

For First Time Users the Engineering Documentation TPMC821-ED is recommended. The Engineering Documentation includes TPMC821-DOC, schematics and data sheets.

Software support (TPMC821-SW-xx) is available for different operating systems.

Technical Information

❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
❍ PCI 2.1 compliant interface
❍ Board size: 149 mm x 74 mm
❍ Local MCU Motorola MC68332 20 MHz
❍ Interbus Controller IPMS3 Interbus Master Protocol Chip
❍ Memory configuration SRAM: 512k x 16 (1MB)
❍ FLASH: 512k x 16 (1MB) + 256k x 16, DPM: 4K x 8
❍ Interbus interface (front I/O) DB9 female connector
❍ RS-232 interface (front I/O) Shielded 8P. Mod.-Jack
❍ LED Diagnostic (front I/O)
❍ Enhanced Diagnostic port at the P14 Mezzanine Connector (back I/O), RESET Push-Button (front I/O)
❍ G4 Phoenix Contact Firmware (4.66)

Order Information

RoHS Compliant
TPMC821-10R   INTERBUS Master G4

None RoHS Compliant
TPMC821-10   None RoHS compliant version of TPMC821-10R

Documentation
TPMC821-DOC   User Manual
TPMC821-ED   Engineering Documentation, includes TPMC821-DOC, Phoenix Doc

Software
TPMC821-SW-25   Integrity Software Support
TPMC821-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC821-SW-65   Windows XP/XPE/2000 Software Support
TPMC821-SW-72   LynxOS Software Support
TPMC821-SW-82   LiNUX Software Support
TPMC821-SW-95   QNX 6 Software Support

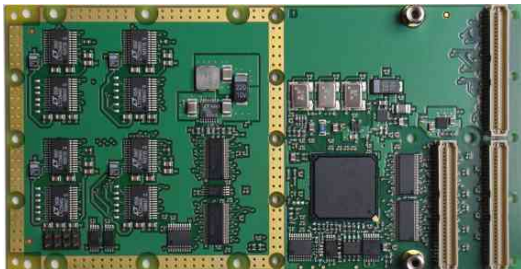For other operating systems please contact TEWS.

Related Products
TPIM001   PIM I/O Module with HD50 SCSI-2 type connector

![TEWS TECHNOLOGIES logo]

The Embedded I/O Company

Application Information

The TPMC363 is a conduction cooled single-width 32 bit PMC with four high speed serial data communication channels.

The TPMC363 is the successor of the discontinued TPMC362, providing similar functionality and full connector and pin-out compatibility.

The serial communication controller is implemented in FPGA logic, along with the bus master capable PCI interface, guaranteeing long term availability and having the option to implement additional functions in the future.

Each channel provides dedicated receive and transmit FIFOs for high data throughput.

Data transfer on the PCI bus is handled via TPMC363 initiated DMA cycles with minimum host/CPU intervention.

Several serial communication protocols are supported by each channel, such as asynchronous, isochronous, synchronous and HDLC mode.

A 14.7456 MHz oscillator provides standard asynchronous baud rates. An additional 24 MHz oscillator is provided for other baud rates. A 10 MHz oscillator is used for the synchronous baud rate of 10 Mbit/s.

Each channel also provides various interrupt sources, generated on INTA. The interrupt sources can be enabled or disabled individually.

Multiprotocol transceivers are used for the line interface. The physical interface is selectable by software, individually for each channel as EIA-232, EIA-422, EIA-449, EIA-530, EIA-530A, V.35, V.36 or X.21.
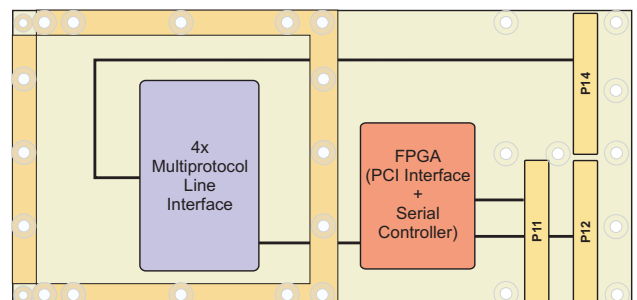
The following signals are provided by the TPMC363 for each channel at the front and rear-I/O connectors: Receive Data (RxD +/-), Transmit Data (TxD +/-), Receive Clock (RxC +/-), Transmit Clock (TxC +/-), Ready-To-Send (RTS +/-), Clear-To-Send (CTS +/-), Carrier-Detect (CD +/-) and GND.

The TPMC363 provides rear panel I/O via P14.

For First-Time-Buyers the engineering documentation TPMC363-ED is recommended. The engineering documentation includes TPMC363-DOC, schematics and data sheets of TPMC363.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- PCI 2.1 compliant master/slave interface
- 3.3V and 5V PCI Signaling Voltage
- Board size: 143.75 mm x 74 mm
- Four high speed asynchronous/synchronous (HDLC) serial interfaces
- Support of RxD, TxD, RxC, TxC, RTS, CTS, CD and GND on rear connector P14
- Physical interface (individually programmable per channel):
  EIA-232, EIA-422, EIA-449, EIA-530, EIA-530A, V.35, V.36 and X.21
- Maximum data rate: 10 Mbit/s (synchronous), 2 Mbit/s (asynchronous), internally or externally provided clock
- EIA-232: up to 115.2 kbit/s
- Temperature range: -40°C to +85°C

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Order Information

RoHS Compliant
TPMC363-10R   Conduction Cooled PMC
4 Channel High Speed Synch/Asynch
Serial Interface

None RoHS Compliant
TPMC363-10   None RoHS compliant version of
TPMC363-10R

Documentation
TPMC363-DOC   User Manual
TPMC363-ED   Engineering documentation
(TPMC363-DOC, Schematics,
Assembly Drawing, Data Sheets)

Software
TDRV009-SW-25   Integrity Software Support
TDRV009-SW-42   VxWorks Software Support
(Legacy and VxBus-Enabled Software
Support)
TDRV009-SW-65   Windows XP/XPE/2000 Software
Support
TDRV009-SW-72   LynxOS Software Support
TDRV009-SW-82   LiNUX Software Support
TDRV009-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
TPIM005   PIM I/O Module with HD68 SCSI-3
type connector

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TEWS
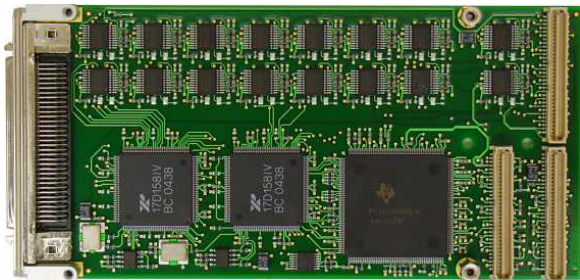## T E C H N O L O G I E S

The Embedded I/O Company

TPMC460 16 Channel Serial Interface RS232/RS422

Application Information

The TPMC460 is a standard single-width 32 bit PMC module and offers 16 channels of high performance asynchronous serial interface.

Five different standard modules are available: The TPMC460-10x provides 16 RS232 interfaces. The TPMC460-11x provides 16 RS422 interfaces. The TPMC460-12x provides 8 RS232 and 8 RS422 interfaces. The TPMC460-13x provides 12 RS232 and 4 RS422 interfaces. The TPMC460-14x provides 4 RS232 and 12 RS422 interfaces.

Other configurations are available as factory option on a per channel basis.

TPMC460-10R

All modules offer front panel I/O with a HD68 connector and P14 I/O. Each RS232 channel supports RxD, TxD, RTS and CTS. Each RS422 supports RxD+/- and TxD+/-.

A transparent 32 bit / 66 MHz PCI-to-PCI Bridge provides access to the two Exar XR17D158 octal PCI-UARTs. The PCI-to-PCI Bridge allows 32 bit accesses on the local PCI bus and permits the high data throughput necessary for the high performance serial interfaces.

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422 channels. The UART offers readable FIFO levels.

Interrupts are supported. For fast interrupt source detection each octal UART provides a special Global Interrupt Source Register.

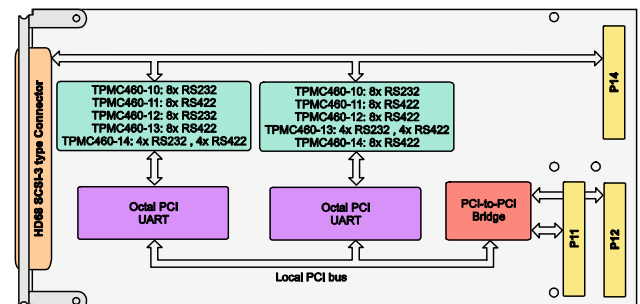All serial channels use ESD protected transceivers up to ±15KV according to IEC 1000-4-2.

The TPMC460 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the engineering documentation TPMC460-ED is recommended. The engineering documentation includes TPMC460-DOC, schematics and data sheets of TPMC460.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- Board size: 149 mm x 74 mm
- Asynchronous serial interface
- PCI-to-PCI Bridge
  - PCI2050b
  - PCI I/O signaling voltage 5V and 3.3V
  - 32 bit / 66 MHz
- UARTs:
  - XR17D158 Octal UART (Exar)
  - PCI 2.2 compliant interface
  - 32 bit / 33 MHz
  - 64 byte transmit FIFO per channel
  - 64 byte receive FIFO per channel
  - Readable FIFO levels
  - Global Interrupt Source Register
  - General Purpose 16 bit Timer/Counter
- Support of RxD, TxD, RTS and CTS for each RS232 channel and RxD+/- and TxD+/- for each RS422 channel of the TPMC460
- Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422: up to 5.5296 Mbps
- ESD protected transceiver (up to ± 15KV according to IEC 1000-4-2)
- Operating temperature -40° to +85°

Order Information

RoHS Compliant

TPMC460-10R   16 Channel Serial RS232, front panel and P14 I/O

TPMC460-11R   16 Channel Serial RS422, front panel and P14 I/O

TPMC460-12R   8 Channel Serial RS232, 8 Channel Serial RS422, front panel and P14 I/O

TPMC460-13R   12 Channel Serial RS232, 4 Channel Serial RS422, front panel and P14 I/O

TPMC460-14R   4 Channel Serial RS232, 12 Channel Serial RS422, front panel and P14 I/O

Other configurations are available as factory option on a per channel base.

None RoHS Compliant

TPMC460-10   None RoHS compliant version of TPMC460-10R

TPMC460-11   None RoHS compliant version of TPMC460-11R

TPMC460-12   None RoHS compliant version of TPMC460-12R

TPMC460-13   None RoHS compliant version of TPMC460-13R

TPMC460-14   None RoHS compliant version of TPMC460-14R

Documentation

TPMC460-DOC   User Manual

TPMC460-ED   Engineering documentation (User Manual, Schematics, Assembly Drawing, Data Sheets)

Software

TDRV002-SW-25   Integrity Software Support

TDRV002-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

TDRV002-SW-65   Windows XP/XPE/2000 Software Support

TDRV002-SW-72   LynxOS Software Support

TDRV002-SW-82   LiNUX Software Support

TDRV002-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA304   Cable Kit for modules with HD68 SCSI-3 type connector

TPIM003   PIM I/O Module with HD68 SCSI-3 type connector and special pin assignment
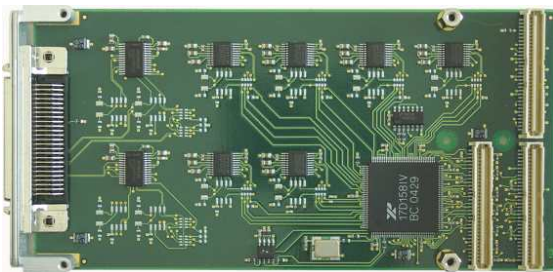
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The Embedded I/O Company

TPMC461   8 Channel Serial Interface RS232/RS422

Application Information

The TPMC461 is a standard single-width 32 bit PMC module and offers 8 channels of high performance asynchronous serial interface.

Three different standard modules are available: The TPMC461-10x provides 8 RS232 interfaces. The TPMC461-11x provides 8 RS422 interfaces. The TPMC461-12x provides 4 RS232 and 4 RS422 interfaces.

Other configurations are available as factory build option on a per channel base.

TPMC461-10R

All modules offer front panel I/O with a HD50 SCSI-2 type connector and P14 I/O. Each RS232 channel supports RxD, TxD, RTS, CTS and GND. Each RS422 channel supports RxD+/-, TxD+/- and GND. Two channels of the TPMC461-10x/-12x offer full modem support (TxD, RxD, CTS, RTS, DSR, DTR, CD, RI and GND) for RS232. Two channels of the TPMC461-11x support RxD+/-, TxD+/-, RTS+/-, CTS+/- and GND for RS422.

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422 channels. The UART offers readable FIFO levels.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the UART provides a special Global Interrupt Source Register.

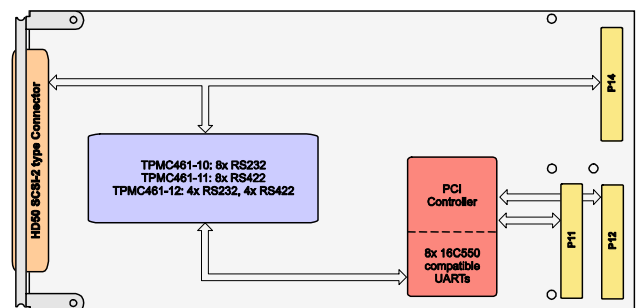All serial channels use ESD protected transceivers. ESD protection is up to ±15KV.

The TPMC461 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the Engineering Documentation TPMC461-ED is recommended. The Engineering Documentation includes TPMC461-DOC, schematics and data sheets of TPMC461.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - ❍ Target Chip: XR17D158 (Exar)
  - ❍ PCI 2.3 compliant interface
  - ❍ PCI I/O signaling voltage 5V and 3.3V
- ❍ Board size: 149 mm x 74 mm
- ❍ Asynchronous serial interface
- ❍ Octal UART: Exar XR17D158
- ❍ Support of RxD, TxD, RTS, CTS and GND for each RS232 channel; RxD+/-, TxD+/- and GND for each RS422 channel. Two channels offer extended support (full modem or RTS+/- and CTS+/-)
- ❍ Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422: up to 5.5296 Mbps
- ❍ 64 byte transmit FIFO per channel
- ❍ 64 byte receive FIFO per channel
- ❍ Readable FIFO levels
- ❍ Global Interrupt Source Register
- ❍ General Purpose 16 bit Timer/Counter
- ❍ ESD protected transceiver (up to ± 15KV)
- ❍ Operating temperature -40°C to +85°C

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Order Information

RoHS Compliant

TPMC461-10R 8 Channel Serial RS232 (2x full modem), front panel and P14 I/O

TPMC461-11R 8 Channel Serial RS422 (2x plus RTS+/-, CTS+/-), front panel and P14 I/O

TPMC461-12R 4 Channel Serial RS232 (2x full modem), 4 Channel Serial RS422, front panel and P14 I/O

Other configurations are available as factory build option on a per channel base.

None RoHS Compliant

TPMC461-10 None RoHS compliant version of TPMC461-10R

TPMC461-11 None RoHS compliant version of TPMC461-11R

TPMC461-12 None RoHS compliant version of TPMC461-12R

Documentation

TPMC461-DOC User Manual

TPMC461-ED Engineering Documentation (TPMC461-DOC, Schematics, Assembly Drawing, Data Sheets)

Software

TDRV002-SW-25 Integrity Software Support

TDRV002-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

TDRV002-SW-65 Windows XP/XPE/2000 Software Support

TDRV002-SW-72 LynxOS Software Support

TDRV002-SW-82 LiNUX Software Support

TDRV002-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA301 Cable Kit for modules with HD50 connector

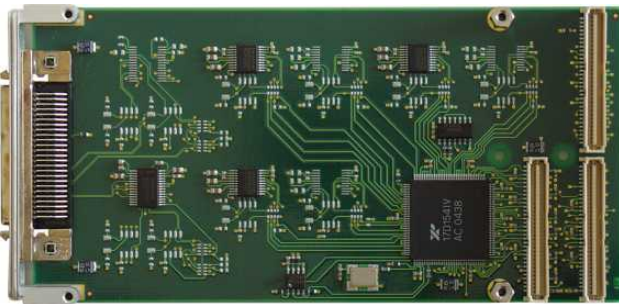**TPIM001** PIM I/O Module with HD50 SCSI-2 type connector

TPMC462   4 Channel Serial Interface RS232/RS422

Application Information

The TPMC462 is a standard single-width 32 bit PMC module and offers 4 channels of high performance asynchronous serial interface.

Three different standard modules are available: The TPMC462-10x provides 4 RS232 interfaces. The TPMC462-11x provides 4 RS422 interfaces. The TPMC462-12x provides 2 RS232 and 2 RS422 interfaces.

Other configurations are available as factory build option on a per channel base.

TPMC462-10

All modules offer front panel I/O with a HD50 SCSI-2 type connector and P14 I/O. Each RS232 channel supports RxD, TxD, RTS, CTS and GND. Each RS422 channel supports RxD+/-, TxD+/- and GND. One channel of the TPMC462-10x/-12x offers full modem support (TxD, RxD, CTS, RTS, DSR, DTR, CD, RI and GND) for RS232. One channel of the TPMC462-11x supports RxD+/-, TxD+/-, RTS+/-, CTS+/- and GND for RS422.

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422 channels. The UART offers readable FIFO levels.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the UART provides a special Global Interrupt Source Register.

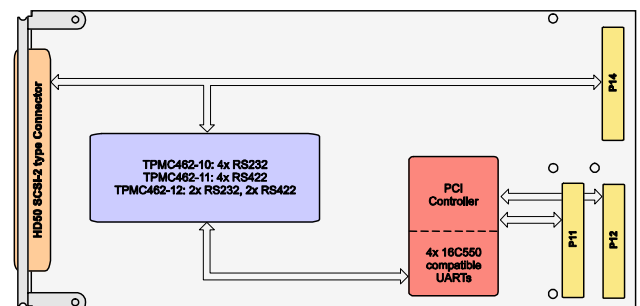All serial channels use ESD protected transceivers. ESD protection is up to ±15KV.

The TPMC462 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the Engineering Documentation TPMC462-ED is recommended. The Engineering Documentation includes TPMC462-DOC, schematics and data sheets of TPMC462.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - Target Chip: XR17D154 (Exar)
  - PCI 2.3 compliant interface
  - PCI I/O signaling voltage 5V and 3.3V
- Board size: 149 mm x 74 mm
- Asynchronous serial interface
- Quad UART: Exar XR17D154
- Support of RxD, TxD, RTS, CTS and GND for each RS232 channel; RxD+/-, TxD+/- and GND for each RS422 channel. One channel offers extended support (full modem or RTS+/- and CTS+/-)
- Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422: up to 5.5296 Mbps
- 64 byte transmit FIFO per channel
- 64 byte receive FIFO per channel
- Readable FIFO levels
- Global Interrupt Source Register
- General Purpose 16 bit Timer/Counter
- ESD protected transceiver (up to ± 15KV)
- Operating temperature -40°C to +85°C

Order Information

RoHS Compliant

TPMC462-10R   4 Channel Serial RS232 (1x full modem), front panel and P14 I/O

TPMC462-11R   4 Channel Serial RS422 (1x plus RTS+/-, CTS+/-), front panel and P14 I/O

TPMC462-12R   2 Channel Serial RS232 (1x full modem), 2 Channel Serial RS422, front panel and P14 I/O

Other configurations are available as factory build option on a per channel base.

None RoHS Compliant

TPMC462-10   None RoHS compliant version of TPMC462-10R

TPMC462-11   None RoHS compliant version of TPMC462-11R

TPMC462-12   None RoHS compliant version of TPMC462-12R

Documentation

TPMC462-DOC   User Manual

TPMC462-ED   Engineering Documentation (TPMC462-DOC, Schematics, Assembly Drawing, Data Sheets)

Software

TDRV002-SW-25   Integrity Software Support

TDRV002-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

TDRV002-SW-65   Windows XP/XPE/2000 Software Support

TDRV002-SW-72   LynxOS Software Support

TDRV002-SW-82   LiNUX Software Support

TDRV002-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA301   Cable Kit for modules with HD50 connector

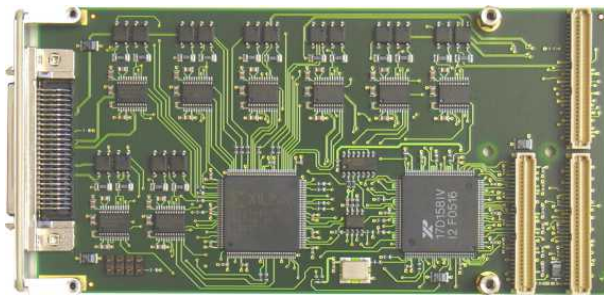**TPIM001**   PIM I/O Module with HD50 SCSI-2 type connector

TPMC465 8 Channel RS232/RS422/RS485 Programmable Serial Interface

Application Information

The TPMC465 is a standard single-width 32 bit PMC module and offers 8 channels of high performance RS232/RS422/RS485 programmable asynchronous serial interface. The module offers front panel I/O with a HD50 SCSI-2 type connector and P14 I/O.

The serial channels can be individually programmed to operate as RS232, RS422 or RS485 full duplex/half duplex interface. In addition programmable termination is provided for the RS422/RS485 interfaces. After power-up all serial I/O lines are in a high impedance state.

Each RS232 channel supports RxD, TxD, RTS, CTS and GND. RS422 and RS485 full duplex support a four wire interface (RX+, RX-, TX+, TX-) plus ground (GND). RS485 half duplex supports a two wire interface (DX+, DX-) plus ground (GND).

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422/RS485 channels. The UART offers readable FIFO levels.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the UART provides a special Global Interrupt Source Register.

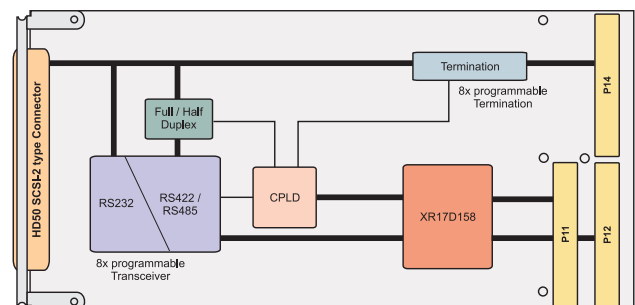All serial channels use ESD protected transceivers. ESD protection is up to ±15KV.

The TPMC465 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the Engineering Documentation TPMC465-ED is recommended. The Engineering Documentation includes TPMC465-DOC, schematics and data sheets of TPMC465.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - ❍ Target Chip: XR17D158 (Exar)
  - ❍ PCI 2.3 compliant interface
  - ❍ PCI I/O signaling voltage 5V and 3.3V
- ❍ Board size: 149 mm x 74 mm
- ❍ Asynchronous serial interface
- ❍ Octal UART: Exar XR17D158
- ❍ Programmable Interfaces:
  - ❍ RS232
  - ❍ RS422
  - ❍ RS485 Full Duplex
  - ❍ RS485 Half Duplex
  - ❍ Programmable Termination for RS422/RS485
- ❍ Support of RxD, TxD, RTS, CTS and GND for each RS232 channel; RxD+/-, TxD+/- and GND for each RS422/RS485 FD channel; D+/- and GND for each RS485 HD channel.
- ❍ Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422/RS485: up to 5.5296 Mbps
- ❍ 64 byte transmit FIFO per channel
- ❍ 64 byte receive FIFO per channel
- ❍ Readable FIFO levels
- ❍ Global Interrupt Source Register
- ❍ General Purpose 16 bit Timer/Counter
- ❍ ESD protected transceiver (up to ± 15KV)
- ❍ Operating temperature -40°C to +85°C

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Order Information

RoHS Compliant
TPMC465-10R   8 Channel Serial Programmable
Interface, front panel and P14 I/O

None RoHS Compliant
TPMC465-10   None RoHS compliant version of
TPMC465-10R

Documentation
TPMC465-DOC   User Manual
TPMC465-ED   Engineering Documentation (TPMC465-
DOC, Schematics, Assembly Drawing,
Data Sheets)

Software
TDRV002-SW-25   Integrity Software Support
TDRV002-SW-42   VxWorks Software Support
(Legacy and VxBus-Enabled Software
Support)
TDRV002-SW-65   Windows XP/XPE/2000 Software
Support
TDRV002-SW-72   LynxOS Software Support
TDRV002-SW-82   LiNUX Software Support
TDRV002-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
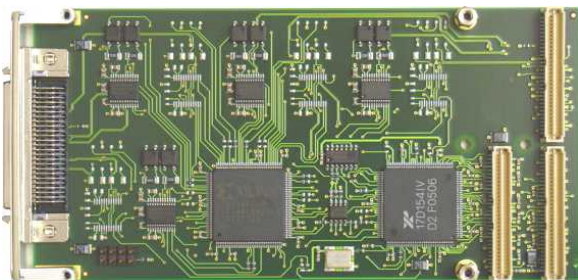**TA301**   Cable Kit for modules with HD50
connector
TPIM001   PIM I/O Module with HD50 SCSI-2 type
connector

TPMC466 4 Channel RS232/RS422/RS485 Programmable Serial Interface

Application Information

The TPMC466 is a standard single-width 32 bit PMC module and offers 4 channels of high performance RS232/RS422/RS485 programmable asynchronous serial interface. The module offers front panel I/O with a HD50 SCSI-2 type connector and P14 I/O.

The serial channels can be individually programmed to operate as RS232, RS422 or RS485 full duplex/half duplex interface. In addition programmable termination is provided for the RS422/RS485 interfaces. After power-up all serial I/O lines are in a high impedance state.

Each RS232 channel supports RxD, TxD, RTS, CTS and GND. RS422 and RS485 full duplex support a four wire interface (RX+, RX-, TX+, TX-) plus ground (GND). RS485 half duplex supports a two wire interface (DX+, DX-) plus ground (GND).

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422/RS485 channels. The UART offers readable FIFO levels.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the UART provides a special Global Interrupt Source Register.

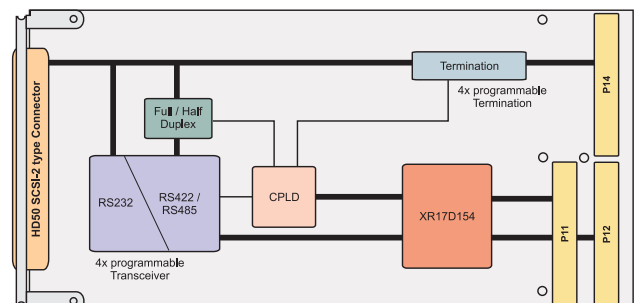All serial channels use ESD protected transceivers. ESD protection is up to ±15KV.

The TPMC466 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the Engineering Documentation TPMC466-ED is recommended. The Engineering Documentation includes TPMC466-DOC, schematics and data sheets of TPMC466.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - Target Chip: XR17D154 (Exar)
  - PCI 2.3 compliant interface
  - PCI I/O signaling voltage 5V and 3.3V
- Board size: 149 mm x 74 mm
- Asynchronous serial interface
- Quad UART: Exar XR17D154
- Programmable Interfaces:
  - RS232
  - RS422
  - RS485 Full Duplex
  - RS485 Half Duplex
  - Programmable Termination for RS422/RS485
- Support of RxD, TxD, RTS, CTS and GND for each RS232 channel; RxD+/-, TxD+/- and GND for each RS422/RS485 FD channel; D+/- and GND for each RS485 HD channel.
- Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422/RS485: up to 5.5296 Mbps
- 64 byte transmit FIFO per channel
- 64 byte receive FIFO per channel
- Readable FIFO levels
- Global Interrupt Source Register
- General Purpose 16 bit Timer/Counter
- ESD protected transceiver (up to ± 15KV)
- Operating temperature -40°C to +85°C

Order Information

RoHS Compliant

TPMC466-10R 4 Channel Programmable Serial Interface, front panel and P14 I/O

None RoHS Compliant

TPMC466-10 None RoHS compliant version of TPMC466-10R

Documentation

TPMC466-DOC User Manual
TPMC466-ED Engineering Documentation (TPMC466-DOC, Schematics, Assembly Drawing, Data Sheets)

Software

TDRV002-SW-25 Integrity Software Support
TDRV002-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV002-SW-65 Windows XP/XPE/2000 Software Support
TDRV002-SW-72 LynxOS Software Support
TDRV002-SW-82 LiNUX Software Support
TDRV002-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
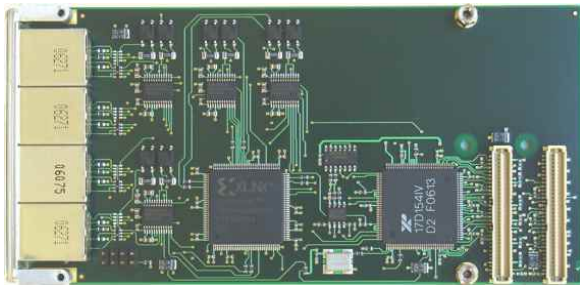
TA301 Cable Kit for modules with HD50 connector
TPIM001 PIM I/O Module with HD50 SCSI-2 type connector

TPMC467 4 Channel RS232/RS422/RS485 Programmable Serial Interface

Application Information

The TPMC467 is a standard single-width 32 bit PMC module and offers 4 channels of high performance RS232/RS422/RS485 programmable asynchronous serial interface. The module offers front panel I/O with four RJ45 type connectors. The TPMC467-10x provides a RJ45 I/O pinout according to EIA-232D. The TPMC467-11x provides a non standard RJ45 I/O pinout (as used on Motorola CPU boards).

The serial channels can be individually programmed to operate as RS232, RS422 or RS485 full duplex/half duplex interface. In addition programmable termination is provided for the RS422/RS485 interfaces. After power-up all serial I/O lines are in a high impedance state.

Each RS232 channel supports RxD, TxD, RTS, CTS and GND. RS422 and RS485 full duplex support a four wire interface (RX+, RX-, TX+, TX-) plus ground (GND). RS485 half duplex supports a two wire interface (DX+, DX-) plus ground (GND).

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422/RS485 channels. The UART offers readable FIFO levels.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the UART provides a special Global Interrupt Source Register.

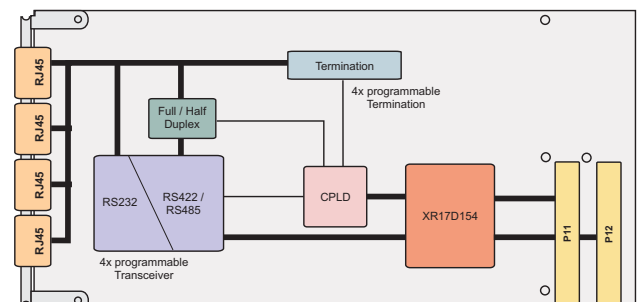All serial channels use ESD protected transceivers. ESD protection is up to ±15KV.

The TPMC467 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the Engineering Documentation TPMC467-ED is recommended. The Engineering Documentation includes TPMC467-DOC, schematics and data sheets of TPMC467.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - Target Chip: XR17D154 (Exar)
  - PCI 2.3 compliant interface
  - PCI I/O signaling voltage 5V and 3.3V
- Board size: 149 mm x 74 mm
- Asynchronous serial interface
- Quad UART: Exar XR17D154
- Programmable Interfaces:
  - RS232
  - RS422
  - RS485 Full Duplex
  - RS485 Half Duplex
  - Programmable Termination for RS422/RS485
- Support of RxD, TxD, RTS, CTS and GND for each RS232 channel; RxD+/-, TxD+/- and GND for each RS422/RS485 FD channel; D+/- and GND for each RS485 HD channel.
- Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422/RS485: up to 5.5296 Mbps
- 64 byte transmit FIFO per channel
- 64 byte receive FIFO per channel
- Readable FIFO levels
- Global Interrupt Source Register
- General Purpose 16 bit Timer/Counter
- ESD protected transceiver (up to ± 15KV)
- Operating temperature -40°C to +85°C

Order Information

RoHS Compliant

TPMC467-10R   4 Channel Serial Programmable Interface, front panel I/O

TPMC467-11R   4 Channel Serial Programmable Interface, front panel (non standard RJ45 I/O pinout) I/O

None RoHS Compliant

TPMC467-10   None RoHS compliant version of TPMC467-10R

TPMC467-11   None RoHS compliant version of TPMC467-11R

Documentation

TPMC467-DOC   User Manual
TPMC467-ED   Engineering Documentation (TPMC467-DOC, Schematics, Assembly Drawing, Data Sheets)

Software

TDRV002-SW-25   Integrity Software Support
TDRV002-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV002-SW-65   Windows XP/XPE/2000 Software Support
TDRV002-SW-72   LynxOS Software Support
TDRV002-SW-82   LiNUX Software Support
TDRV002-SW-95   QNX 6 Software Support
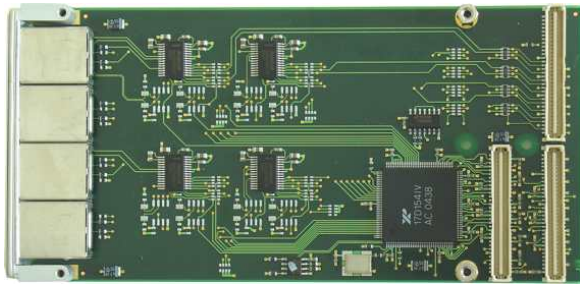
For other operating systems please contact TEWS.

TPMC463   4 Channel Serial Interface RS232/RS422

Application Information

The TPMC463 is a standard single-width 32 bit PMC module and offers 4 channels of high performance asynchronous serial interface.

Three different standard modules are available: The TPMC463-10x provides 4 RS232 interfaces. The TPMC463-11x provides 4 RS422 interfaces. The TPMC463-12x provides 2 RS232 and 2 RS422 interfaces. The TPMC463-20x provides 4 RS232 interfaces with non standard RJ45 I/O pinout (as used on Motorola CPU boards).

Other configurations are available as factory build option on a per channel base.

All modules offer front panel I/O with four RJ45 connectors and P14 I/O. Each RS232 channel supports TxD, RxD, CTS, RTS, DTR, CD, DSR/RI and GND. Each RS422 channel supports RxD+/-, TxD+/-, RTS+/-, CTS+/- and GND.

Each channel has 64 byte transmit and receive FIFOs to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable and the baud rate is individually programmable up to 921.6 kbps for RS232 channels and 5.5296 Mbps for RS422 channels. The UART offers readable FIFO levels.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the UART provides a special Global Interrupt Source Register.

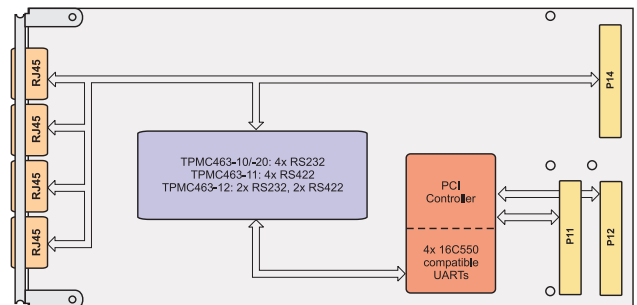All serial channels use ESD protected transceivers. ESD protection is up to ±15KV.

The TPMC463 can operate with 3.3V and 5.0V PCI I/O signaling voltage.

For First-Time-Buyers the Engineering Documentation TPMC463-ED is recommended. The Engineering Documentation includes TPMC463-DOC, schematics and data sheets of TPMC463.

Software Support (TDRV002-SW-xx) for different operating systems is available.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
  - ❍ Target Chip: XR17D154 (Exar)
  - ❍ PCI 2.3 compliant interface
  - ❍ PCI I/O signaling voltage 5V and 3.3V
- ❍ Board size: 149 mm x 74 mm
- ❍ Asynchronous serial interface
- ❍ Quad UART: Exar XR17D154
- ❍ Support of RxD, TxD, RTS, CTS, DTR, DCD, DSR/RI and GND for each RS232 channel; RxD+/-, TxD+/-, RTS+/-, CTS+/- and GND for each RS422 channel
- ❍ Programmable baud rates:
  RS232: up to 921.6 kbps
  RS422: up to 5.5296 Mbps
- ❍ 64 byte transmit FIFO per channel
- ❍ 64 byte receive FIFO per channel
- ❍ Readable FIFO levels
- ❍ Global Interrupt Source Register
- ❍ General Purpose 16 bit Timer/Counter
- ❍ ESD protected transceiver (up to ± 15KV)
- ❍ Operating temperature -40°C to +85°C

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Order Information

RoHS Compliant

TPMC463-10R   4 Channel Serial RS232, front panel and P14 I/O

TPMC463-11R   4 Channel Serial RS422, front panel and P14 I/O

TPMC463-12R   2 Channel Serial RS232, 2 Channel Serial RS422, front panel and P14 I/O

TPMC463-20R   4 Channel Serial RS232, front panel and P14 I/O (non standard RJ45 I/O pinout)

Other configurations are available as factory build option on a per channel base.

None RoHS Compliant

TPMC463-10   None RoHS compliant version of TPMC463-10R

TPMC463-11   None RoHS compliant version of TPMC463-11R

TPMC463-12   None RoHS compliant version of TPMC463-12R

TPMC463-20   None RoHS compliant version of TPMC463-20R

Documentation

TPMC463-DOC   User Manual

TPMC463-ED   Engineering Documentation (TPMC463-DOC, Schematics, Assembly Drawing, Data Sheets)

Software

TDRV002-SW-25   Integrity Software Support

TDRV002-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

TDRV002-SW-65   Windows XP/XPE/2000 Software Support

TDRV002-SW-72   LynxOS Software Support

TDRV002-SW-82   LiNUX Software Support

TDRV002-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TPIM001   PIM I/O Module with HD50 SCSI-2 type connector

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e-mail: info@tews.com   www.tews.com
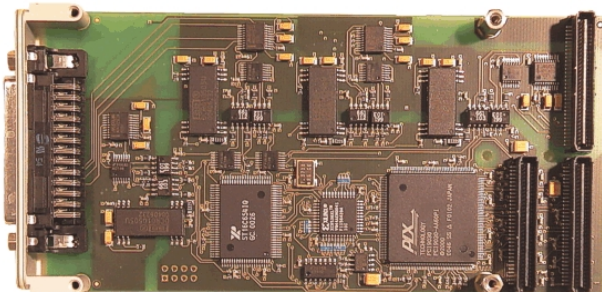
TPMC860   4 Channel Isolated Serial Interface RS232

Application Information

The TPMC860 is a standard single-width 32 bit PMC module with four channels of high performance RS232 asynchronous interface. Each of the four channels is isolated from the system and against each other by optocoupler and on board DC/DC converter per channel.

The serial channels are accessible through a DB25 connector mounted in the front panel and via P14 I/O. Each channel has a 64 byte transmit FIFO and a 64 byte receive FIFO to significantly reduce the overhead required to provide data to and get data from the transmitter and receivers. The FIFO trigger levels are programmable. The TPMC860 supports Receive Data (RxD), Transmit Data (TxD), Ready-To-Send (RTS), Clear-To-Send (CTS) and isolated GND per channel. The baud rate is individually programmable up to 460.8 Kbaud for each channel. Interrupts are supported.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the TPMC860 provides a special interrupt status register.

Each RS232 receiver input and transmitter output is protected against electrostatic discharge (ESD) up to +/- 15kV according to IEC 1000-4-2.
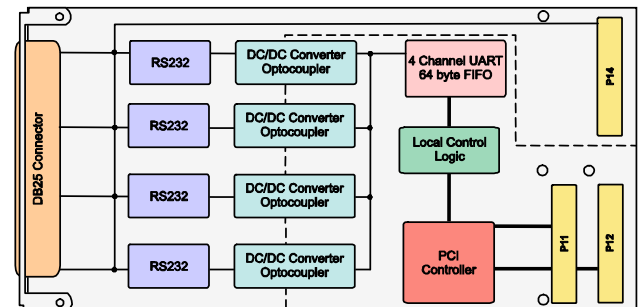
For First Time Users the Engineering Documentation TPMC860-ED is recommended. The Engineering Documentation includes TPMC860-DOC, schematics and data sheets.

Software Support (TPMC860-SW-xx) is available for different operating systems.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- PCI 2.1 compliant interface
- 3.3V and 5V PCI Signaling Voltage
- Board size: 149 mm x 74 mm
- 4 channel RS232 asynchronous serial interface
- Serial channels isolated from system and against each other
- On board DC/DC converter per channel
- Support of RxD,TxD and GND
- Programmable baud rates up to 460.8 Kbaud
- 64 byte transmit FIFO per channel
- 64 byte receive FIFO per channel
- ESD protected transceiver (up to +/- 15KV according to IEC 1000-4-2)

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Order Information

RoHS Compliant
TPMC860-10R   4 Channel Isolated Serial RS232, front panel I/O and P14 I/O

None RoHS Compliant
TPMC860-10   None RoHS compliant version of TPMC860-10R

Documentation
TPMC860-DOC   User Manual
TPMC860-ED   Engineering Documentation, includes TPMC860-DOC

Software
TPMC860-SW-25   Integrity Software Support
TPMC860-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC860-SW-65   Windows XP/XPE/2000 Software Support
TPMC860-SW-72   LynxOS Software Support
TPMC860-SW-82   LiNUX Software Support
TPMC860-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
TPIM001   PIM I/O Module with HD50 SCSI-2 type connector
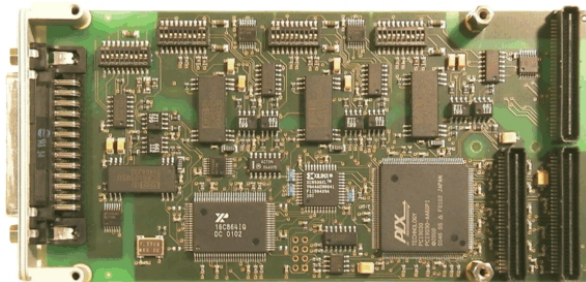**TA303**   Cable Kit for modules with DB25 female connector

TPMC861   4 Channel Isolated Serial Interface RS422 / RS485

Application Information

The TPMC861 is a standard single-width 32 bit PMC module with four channels of high performance RS422/485-HD/FD asynchronous serial interface. Each of the four channels is isolated from the system and against each other by optocoupler and on board DC/DC converter per channel.

The serial channels are accessible through a DB25 connector mounted in the front panel and via P14 I/O. Each channel has a 128 byte transmit FIFO and a 128 byte receive FIFO to significantly reduce the overhead required to provide data to and get data from the transmitter and receivers. The FIFO trigger levels are programmable. For RS422 and RS485-FD a four wire interface (RX+, RX-, TX+, TX-) plus isolated ground (GND) per channel is supported. For RS485-HD a two wire interface (DX+, DX-) plus isolated ground (GND) per channel is supported. The baud rate is individually programmable up to 460.8 Kbaud for each channel. The interrupts are supported.

All channels generate interrupts on PCI interrupt INTA. For fast interrupt source detection the TPMC861 provides a special interrupt status register. Each receiver input and transmitter output of all channels is protected against electrostatic discharge (ESD) up to +/- 15kV according to IEC 1000-4-2.
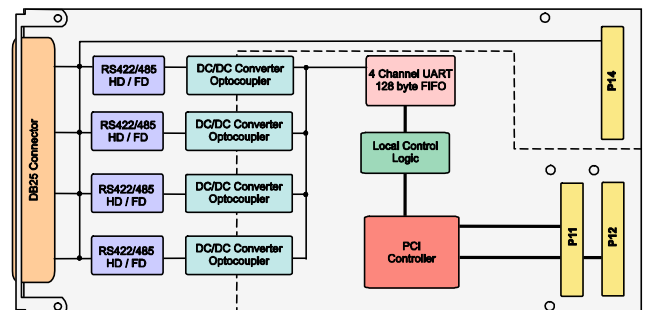

For First-Time-Buyers the Engineering Documentation TPMC861-ED is recommended. The Engineering Documentation includes TPMC861-DOC, schematics and data sheets of TPMC861.

Software Support (TPMC861-SW-xx) is available for different operating systems.

Technical Information

❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
❍ PCI 2.1 compliant interface
❍ 3.3V and 5V PCI Signaling Voltage
❍ 4 channel RS422/485 asynchronous serial interface
❍ Serial channels isolated from system and against each other by optocoupler and on board DC/DC converter per channel
❍ For RS422 and RS485-FD support of RxD,TxD and GND per channel
❍ For RS485-HD support of DX+, DX- and GND per channel
❍ Programmable baud rates up to 460.8 Kbaud
❍ 128 byte transmit FIFO and 128 byte receive FIFO per channel
❍ ESD protected transceiver (up to +/- 15KV according to IEC 1000-4-2)
❍ Operating temperature –40°C to +85°C

Order Information

RoHS Compliant

TPMC861-10R   4 Cannel Isolated Serial RS422 / RS485 Interface, front panel and P14 I/O

None RoHS Compliant

TPMC861-10   None RoHS compliant version of TPMC861-10R

Documentation

TPMC861-DOC   User Manual
TPMC861-ED   Engineering Documentation, includes TPMC861-DOC

Software

TPMC861-SW-25 Integrity Software Support
TPMC861-SW-42 VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC861-SW-65 Windows XP/XPE/2000 Software Support
TPMC861-SW-72 LynxOS Software Support
TPMC861-SW-82 LiNUX Software Support
TPMC861-SW-95 QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA303   Cable Kit for modules with DB25 female connector
TPIM001   PIM I/O Module with HD50 SCSI-2 type connector

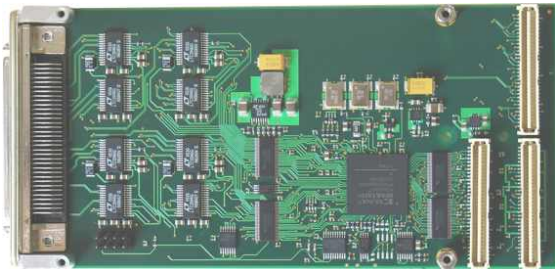# TPMC863   4 Channel High Speed Synch/Asynch Serial Interface

Application Information

The TPMC863 is a standard single-width 32 bit PMC with four high speed serial data communication channels.

The TPMC863 is the successor of the discontinued TPMC862, providing similar functionality and full connector and pin-out compatibility.

The serial communication controller is implemented in FPGA logic, along with the bus master capable PCI interface, guaranteeing long term availability and having the option to implement additional functions in the future.

Each channel has a receive and a transmit FIFO of 512 long words (32 bit) per channel for high data throughput.

Data transfer on the PCI bus is handled via TPMC863 initiated DMA cycles with minimum host/CPU intervention.

Several serial communication protocols are supported by each channel, such as asynchronous, isochronous, synchronous and HDLC mode.

A 14.7456 MHz oscillator provides standard asynchronous baud rates. An additional 24 MHz oscillator is provided for other baud rates. A 10 MHz oscillator is used for the synchronous baud rate of 10 Mbit/s.

Each channel also provides various interrupt sources, generated on INTA. The interrupt sources can be enabled or disabled individually.

Multiprotocol transceivers are used for the line interface. The physical interface is selectable by software, individually for each channel as EIA-232, EIA-422, EIA-449, EIA-530, EIA-530A, V.35, V.36 or X.21.
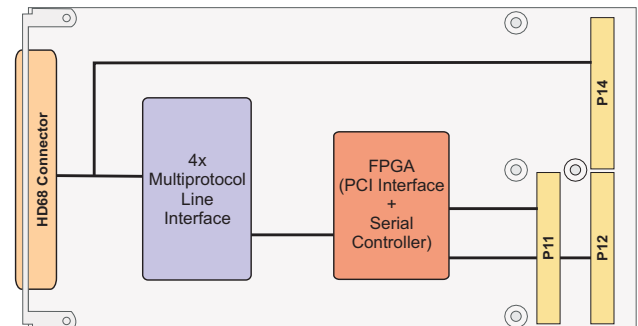
The following signals are provided by the TPMC863 for each channel at the front and rear-I/O connectors: Receive Data (RxD +/-), Transmit Data (TxD +/-), Receive Clock (RxC +/-), Transmit Clock (TxC +/-), Ready-To-Send (RTS +/-), Clear-To-Send (CTS +/-), Carrier-Detect (CD +/-) and GND. Additionally serial channel 3 provides Data-Set-Ready (DSR3 +/-) and Data-Terminal-Ready (DTR3 +/-) at the front I/O connector.

The TPMC863 provides front panel I/O via an HD68 SCSI-3 type connector and rear I/O via P14.

For First-Time-Buyers the engineering documentation TPMC863-ED is recommended. The engineering documentation includes TPMC863-DOC, schematics and data sheets of TPMC863 devices.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- ❍ PCI 2.1 compliant master/slave interface
- ❍ 3.3V and 5V PCI Signaling Voltage
- ❍ Board size: 147 mm x 74 mm
- ❍ Four high speed synchronous/asynchronous serial interfaces
- ❍ Support of RxD, TxD, RxC, TxC, RTS, CTS, CD and GND on HD68 front connector, parallel to rear connector P14; DTR3 and DSR3 at front I/O only
- ❍ Physical interface (individually programmable per channel):
  EIA-232, EIA-422, EIA-449, EIA-530, EIA-530A, V.35, V.36 and X.21
- ❍ Maximum data rate: 10 Mbit/s (synchronous), 2 Mbit/s (asynchronous), internal or external provided clock
- ❍ EIA-232: up to 115.2 kbit/s
- ❍ Temperature range: -40°C to +85°C

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Order Information

RoHS Compliant
TPMC863-10R   4 Channel High Speed Synch/Asynch Serial Interface

None RoHS Compliant
TPMC863-10   None RoHS compliant version of TPMC863-10R

Documentation
TPMC863-DOC   User Manual

TPMC863-ED   Engineering Documentation (TPMC863-DOC, Schematics, Assembly Drawing, Data Sheets)

Software
TDRV009-SW-25   Integrity Software Support

TDRV009-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

TDRV009-SW-65   Windows XP/XPE2000 Software Support

TDRV009-SW-72   LynxOS Software Support

TDRV009-SW-82   LiNUX Software Support

TDRV009-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
TA304   Cable Kit for modules with HD68 connector

TPIM005   PIM I/O Module with HD68 SCSI-3 type connector

TPMC866   8 Channel Serial Interface RS232 / RS422 /RS485

Application Information

The TPMC866 is a standard single-width 32 bit PMC module and has eight channels of high performance asynchronous serial interface with front I/O and back I/O.

The TPMC866-10x offers an 8 channel RS232 interface and supports Receive Data (RxD), Transmit Data (TxD), Ready-To-Send (RTS), Clear-To-Send (CTS) and GND for each channel. Additionally serial channel one and serial channel two provide Data-Set-Ready (DSR), Data-Terminal-Ready (DTR), Data-Carrier-Detect (DCD) and Ring-Detect-Indicator (RI).
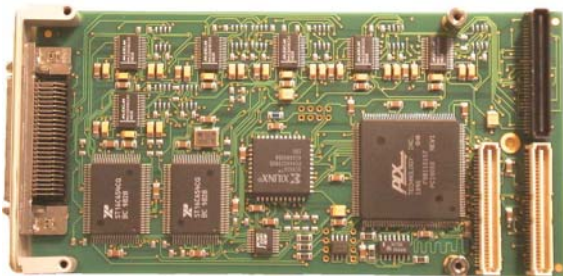

Figure: TPMC866-10R

The TPMC866-11x supports an 8 channel RS422 interface and offers RS422 signal levels by differential transmitters and receivers. The Transmit Data (TxD +/-), Receive Data (RxD +/-) and GND are provided for each serial channel. The receiver signal termination (120ohms between RxD+ and RxD-) is provided on the TPMC866 per channel.

Each channel of the TPMC866-10x/-11x has a 64 byte transmit FIFO and a 64 byte receive FIFO to significantly reduce the overhead required to provide data to and get data from the transmitter and receivers. The FIFO trigger levels are programmable.

The TPMC866-12x provides an 8 channel of high performance serial interface. Each serial channel can be configured by a DIP switch to operate as an RS422, RS485-FD-M (Full Duplex Master), RS485-FD-S (Full Duplex Slave) or RS485-HD (Half Duplex) interface. For RS422 and RS485-FD a four wire interface (RX+, RX-, TX+, TX-) plus ground (GND) is offered. For RS485-HD a two wire interface (DX+, DX-) plus ground (GND) is supported. For the front I/O a HD50 SCSI-2 type female connector is located in the front panel. For the back I/O the P14 I/O connector is supported. Each channel of the TPMC866-12x has a 128 byte transmit FIFO and a 128 byte receive FIFO to significantly reduce the overhead required to provide data to the transmitters and get data from the receivers. The FIFO trigger levels are programmable.

For all modules the baud rate is individually programmable up to 460.8 Kbaud per channel. All channels use the PCI interrupt INTA together but for fast interrupt source detection the TPMC866-xx provides a special interrupt status register. Receiver and transmitter are protected against electrostatic discharge (ESD).
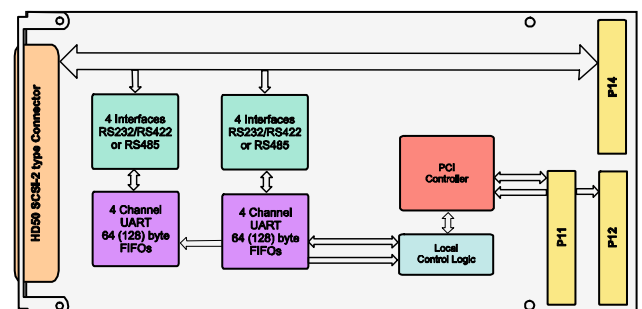
All TPMC866 modules are available in extended temperature range as TPMC866-xx-ET versions.

For First Time Users the Engineering Documentation TPMC866-ED/ED-12 are recommended. The Engineering Documentations include TPMC866-DOC/DOC-12, schematics and data sheets.

Software support (TPMC866-SW-xx) for different operating systems is available.

Technical Information

❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
❍ PCI 2.1 compliant interface
❍ Board size: 149 mm x 74 mm
❍ 8 channel asynchronous serial interface
❍ Support of RxD, TxD, RTS, CTS and GND for TPMC866-10x; support of RxD+/-, TxD+/- and GND for TPMC866-11x and support of TXD+/-, RXD+/-, GND (RS422 and RS485-FD M/S) and DX+/-, GND (RS485-HD) for TPMC866-12x
❍ Programmable baud rates up to 460.8 Kbaud
❍ 64 byte transmit FIFO per channel, 64 byte receive FIFO per channel for TPMC866-10x/-11x and 128 kbyte transmit FIFO per channel, 128 kbyte receive FIFO per channel for TPMC866-12x
❍ ESD protected transceiver (up to +/- 15KV according to IEC 1000-4-2)
❍ Temperature range: 0°C to +70°C (TPMC866-10x/-11x/-12x) and -40°C to +85°C (TPMC866-10x-ET/-11x-ET/-12x-ET)

Order Information

RoHS Compliant

TPMC866-10R	8 channel serial RS232
TPMC866-10R-ET	Same as TPMC866-10R but Extended Temperature Range
TPMC866-11R	8 channel serial RS422
TPMC866-11R-ET	Same as TPMC866-11R but Extended Temperature Range
TPMC866-12R	8 channel serial RS422/RS485
TPMC866-12R-ET	Same as TPMC866-12R but Extended Temperature Range
TPMC866-TM-10R	Transition Module for TPMC866, provides 8 DB25 in a 6U/8TE front panel
TPMC866-TM-20R	Transition Module for TPMC866, provides 8 RJ45 in a 6U/4TE front panel TPMC866-10R
TPMC866-TM-30R	Transition Module for TPMC866, provides 16 4-pin RJ in a 6U/4TE front panel
TPMC866-IO-10R	Mounting Rail I/O Module

None RoHS Compliant

TPMC866-10	None RoHS compliant version of TPMC866-10T
TPMC866-10-ET	None RoHS compliant version of TPMC866-10R-ET
TPMC866-11	None RoHS compliant version of TPMC866-11R
TPMC866-11-ET	None RoHS compliant version of TPMC866-11R-ET
TPMC866-12	None RoHS compliant version of TPMC866-12R
TPMC866-12-ET	None RoHS compliant version of TPMC866-12R-ET
TPMC866-TM-10	None RoHS compliant version of TPMC866-TM-10R
TPMC866-TM-20	None RoHS compliant version of TPMC866-TM-20R
TPMC866-TM-30	None RoHS compliant version of TPMC866-TM-30R
TPMC866-IO-10	None RoHS compliant version of TPMC866-IO-10R

Documentation

TPMC866-DOC	User Manual for TPMC866-10x/11x
TPCM866-DOC-12	User Manual for TPMC866-12x
TPMC866-ED	Engineering Documentation for TPMC866-10x/11x, includes TPMC866-DOC-12
TPMC866-ED-12	Engineering Documentation for TPMC866-12x, includes TPMC866-DOC
TPMC866-TM-10-DOC	User Manual for TPMC866-TM-10x-DOC
TPMC866-TM-20-DOC	User Manual for TPMC866-TM-20x-DOC
TPMC866-TM-30-DOC	User Manual for TPMC866-TM-30x-DOC
TPMC866-IO-10-DOC	User Manual for TPMC866-IO-10x-DOC

Software

TPMC866-SW-25	Integrity Software Support
TPMC866-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC866-SW-65	Windows XP/XPE/2000 Software Support
TPMC866-SW-72	LynxOS Software Support
TPMC866-SW-82	LiNUX Software Support
TPMC866-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
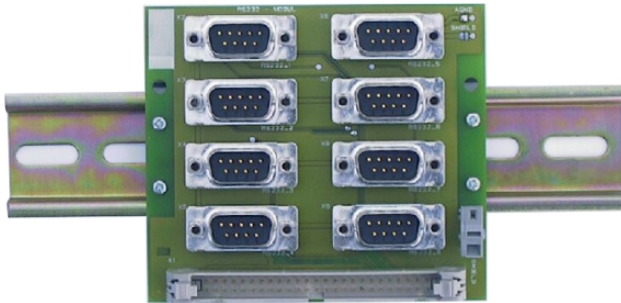
TA301	Cable Kit for modules with HD50 connector
TPIM001	PIM I/O Module with HD50 SCSI-2 type connector

TPMC866-IO DIN Rail Mounting I/O Module (8 x DB9) for TPMC866

Application Information

The TPMC866-IO is a DIN Rail Mounting I/O module for the serial interface TPMC866 (versions with front panel access).

The TPMC866-IOsupports all versions of the TPMC866 (RS232, RS422 and RS485 interfaces).

TA105: ribbon cable with 50 pin ribbon cable connector and 50 pin SCSI-2 male connector

Eight DB9 male connectors are mounted on the module.

The TPMC866-IO supports TXD, RXD, RTS, CTS and GND for each of the eight serial channels of the TPMC866-10x (RS232).

TxD+/-, RxD+/-, GND are supported for the TPMC866-11x/12x (RS422) and Dx+/-, GND for the TPMC866-12x (RS485).

Technical Information

- ❍ DIN Rail Mounting I/O module, 95 mm x 83 mm
- ❍ 8 DB9 male connectors
- ❍ Terminal point for shield of all DB9 connectors
- ❍ Supports front panel I/O versions of the TPMC866
- ❍ Cable TA105, 0.8m ribbon cable with 50 pin ribbon cable connector and 50 pin SCSI-2 male connector, is included
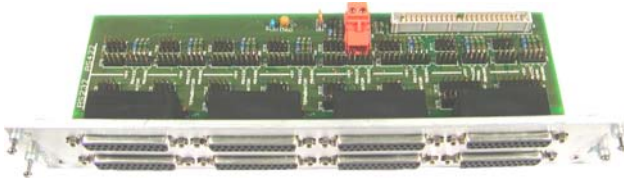
Order Information

TPMC866-IO-10R	DIN Rail Mounting I/O module with DB9 male connectors for TPMC866 and one TA105 cable
TPMC866-IO-10	None RoHS compliant version of TPMC866-IO-10R
TPMC866-IO-10-DOC	User Manual for TPMC866-IO-10x

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TPMC866-TM-10   Transition Module (8 x DB25) for TPMC866

Application Information

The TPMC866-TM-10 is a transition module for the serial interface TPMC866 (versions with front panel access).

The transition module supports all versions of the TPMC866 (RS232, RS422 and RS485 interfaces).

Eight DB25 female connectors are mounted in a 6U 8TE EMV front panel.

The transition module supports TXD, RXD, RTS, CTS and GND for each of the eight serial channels of the TPMC866-10x (RS232).

TxD+/-, RxD+/-, GND are supported for the TPMC866-11x/12x (RS422) and Dx+/-, GND for the TPMC866-12x (RS485).

Each serial channel can be configured by jumper as DTE or DCE.

On board termination is provided for RS422/RS485. Termination can be activated by jumper.

A 2 pin terminal block on the transition module can be used to provide +5V to each of the eight DB25 connectors (pin 9) and to supply the on board termination for RS422/RS485. Support of the +5V is selectable by jumper for each serial channel. The +5V is fuse protected by a 1A multi-fuse.

TA105: ribbon cable with 50 pin ribbon cable connector and 50 pin SCSI-2 male connector

Technical Information

- ❍ 6U / 8TE EMV front panel
- ❍ 8 DB25 female connectors mounted in front panel
- ❍ Supports front panel I/O versions of the TPMC866
- ❍ DTE and DCE configuration by jumper fields
- ❍ RS422 and RS485 termination selectable by jumper
- ❍ +5V / GND by 2 pin terminal block; Power only required to supply on board termination or to provide +5V to pin 9 of the DB25 connectors of channel 1 to 8
- ❍ Fuse protected by a 1A multi-fuse
- ❍ Cable TA105, 0.8m ribbon cable with 50 pin ribbon cable connector and 50 pin SCSI-2 male connector, is included

Order Information

TPMC866-TM-10R	Transition Module for TPMC866; 6U / 8TE with DB25 connectors and one TA105 cable
TPMC866-TM-10	None RoHS compliant version of TPMC866-TM-10R
TPMC866-TM-10-DOC	User Manual for TPMC866-TM-10x

TPMC866-TM-20 Transition Module (8 x RJ45) for TPMC866
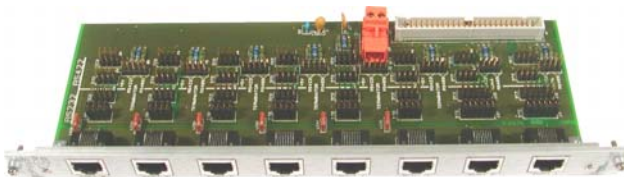
Application Information

The TPMC866-TM-20 is a transition module for the serial interface TPMC866 (versions with front panel access).

The transition module TPMC866-TM-20 supports all versions of the TPMC866 (RS232, RS422 and RS485 interfaces).

Eight shielded RJ45 connectors are mounted in a 6U 4TE EMV front panel.

The transition module supports TXD, RXD, RTS, CTS and GND for each of the eight channels of the TPMC866-10x (RS232).

TxD+/-, RxD+/-, GND are supported for the TPMC866-11x/12x (RS422) and Dx+/-, GND for the TPMC866-12x (RS485).

Each serial channel can be configured by jumper as DTE or DCE.

On board termination is provided for RS422/RS485. Termination can be activated by jumper.

A 2 pin terminal block on the transition module can be used to provide +5V to the RJ45 connectors (pin 1) of channel 3 to 8 and to supply the on board termination for RS422/ RS485. Support of the +5V is selectable by jumper. The +5V is fuse protected by a 1A multi-fuse.

TA105: ribbon cable with 50 pin ribbon cable connector and 50 pin SCSI-2 male connector

Technical Information

- 6U / 4TE EMV front panel
- 8 shielded RJ45 mounted in front panel
- Supports front panel I/O versions of the TPMC866
- DTE and DCE configuration by jumper fields
- RS422 and RS485 termination selectable by jumper
- +5V / GND by 2 pin terminal block; Power only required to supply on board termination or to provide +5V to pin 1 of RJ45 connectors of channel 3 to 8
- Fuse protected by a 1A multi-fuse
- Cable TA105, 0.8m ribbon cable with 50 pin ribbon cable connector and 50 pin SCSI-2 male connector, is included

Order Information

TPMC866-TM-20R   Transition Module for TPMC866; 6 U / 4TE with shielded RJ45 connectors and one TA105 cable

TPMC866-TM-20   None RoHS compliant version of TPMC866-TM-20R

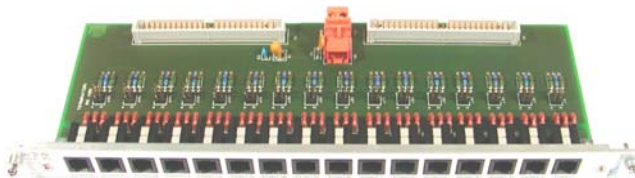**TPMC866-TM-20-DOC** User Manual for TPMC866-TM-20x

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TPMC866-TM-30 Transition Module (16 x RJH) for TPMC866

Application Information

The TPMC866-TM-30 is a high density transition module for the TPMC866 with front panel access.

The TPMC866-TM-30x supports the TPMC866-10x (RS232 interface) and the TPMC866-12x (RS485 HD configuration only). Up to two modules can be connected to one transition module TPMC866-TM-30x.

Sixteen 4 pin RJH connectors are mounted in a 6U 4TE EMV front panel.

TA105: ribbon cable with 50 pin ribbon cable connector and 50 pin SCSI-2 male connector

The transition module supports TXD, RXD, GND for each set of the eight channels of the TPMC866-10x (RS232) and Dx+/-, GND for the TPMC866-12 (RS485 HD configuration).

On board termination is provided for RS485. Termination can be activated by jumper. A two pin screw terminal (X9) can be used to supply the on board termination for RS485.

Technical Information

- ❑ 6U / 4TE EMV front panel
- ❑ Sixteen 4 pin RJH connectors mounted in front panel
- ❑ Supports front panel I/O versions of the TPMC866-10/12
- ❑ RS485 termination selectable by jumper
- ❑ +5V / GND by 2 pin terminal block; Power only required to supply on board termination
- ❑ Fuse protected by a 1A multi-fuse
- ❑ Two TA105-10, 0.8m ribbon cables with 50 pin ribbon cable connector and 50 pin SCSI-2 male connector, are included

Order Information

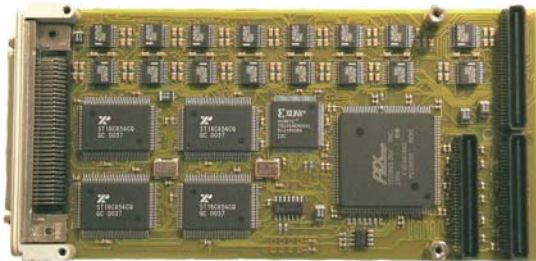|	
TPMC866-TM-30R	Transition Module for TPMC866; 6U / 4TE with sixteen 4 pin RJH connectors and two TA105 cables
TPMC866-TM-30	None RoHS compliant version of TPMC866-TM-30R
TPMC866-TM-30-DOC	User Manual for TPMC866-TM-30

10/2009

TPMC868   16 Channel Serial Interface RS232

Application Information

The TPMC868 is a standard single-width 32 bit PMC module and offers 16 channels of high performance asynchronous serial interface. Two different modules are available: the TPMC868-10x offers 16 RS232 interfaces with front panel I/O and P14 I/O supporting RxD, TxD, RTS, CTS and GND for each of the 16 RS232 channels. The TPMC868-11x provides 16 RS422 interfaces with front panel I/O and P14 I/O supporting RxD+/-, TxD+/- and GND per channel.

Each channel has a 64 byte transmit FIFO and a 64 byte receive FIFO to significantly reduce the overhead required to provide data to and get data from the transmitters and receivers. The FIFO trigger levels are programmable.

The baud rate is individually programmable up to 230 Kbaud. All serial channels use ESD protected transceivers up to +/-15KV according to IEC 1000-4-2.
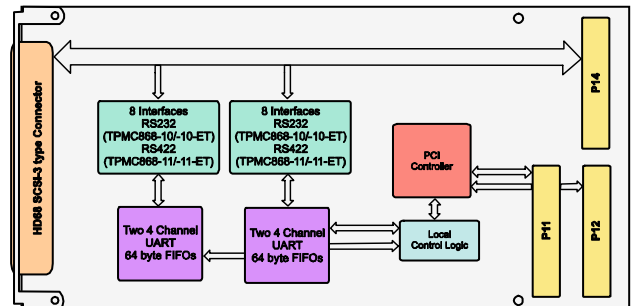
All TPMC868 modules are available in extended temperature range as TPMC868-xx-ET versions.

For First Time Users the Engineering Documentation TPMC868-ED is recommended. The Engineering Documentation includes TPMC868-DOC, schematics and data sheets.

Software support (TPMC868-SW-xx) is available for different operating systems.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- ❍ PCI 2.1 compliant interface
- ❍ Board size: 149 mm x 74 mm
- ❍ 16 channel asynchronous serial interface RS232
- ❍ Support of RxD, TxD, RTS, CTS and GND for each serial channel of the TPMC868-10x and RxD+/-, TxD+/- and GND for each serial channel of the TPMC868-11x
- ❍ Programmable baud rates up to 230 Kbaud
- ❍ 64 byte transmit FIFO per channel
- ❍ 64 byte receive FIFO per channel
- ❍ ESD protected transceiver (up to +/- 15KV according to IEC 1000-4-2)
- ❍ Temperature range: 0°C to +70°C (TPMC868-10x/-11x) and -40°C to +85°C (TPMC868-10x-ET/-11x-ET)

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Order Information

RoHS Compliant

TPMC868-10R	16 Channel Serial RS232, front panel I/O and P14 I/O
TPMC868-10R-ET	Same as TPMC868-10R but Extended Temperature Range
TPMC868-11R	16 Channel Serial RS422, front panel I/O and P14 I/O
TPMC868-11R-ET	Same as TPMC868-11R but Extended Temperature Range

None RoHS Compliant

TPMC868-10	None RoHS compliant version of TPMC868-10R
TPMC868-10-ET	None RoHS compliant version of TPMC868-10R-ET
TPMC868-11	None RoHS compliant version of TPMC868-11R
TPMC868-11-ET	None RoHS compliant version of TPMC868-11R-ET

Documentation

TPMC868-DOC	User Manual
TPMC868-ED	Engineering Documentation, includes TPMC868-DOC

Software

TPMC868-SW-25	Integrity Software Support
TPMC868-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC868-SW-65	Windows XP/XPE/2000 Software Support
TPMC868-SW-72	LynxOS Software Support
TPMC868-SW-82	LiNUX Software Support
TPMC868-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA304	Cable Kit for modules with HD68 connector
TPIM003	PIM I/O Module with HD68 SCSI-3 type connector and special pin assignment

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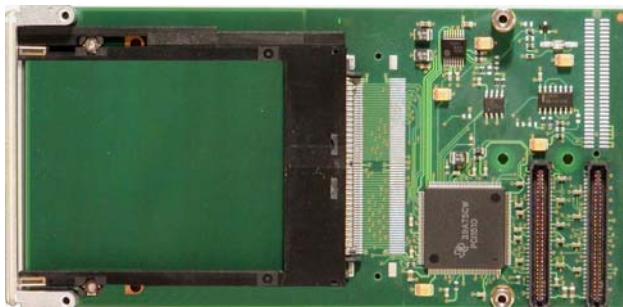e-mail: info@tews.com   www.tews.com

TPMC871 1 Socket PC Card Interface

Application Information

The TPMC871 is a standard single-width 32 bit PMC module with one interface for 16 bit PC Card or 32 bit Cardbus cards using a PC Card controller and a power management unit. The register map of the PC Card controller is Intel 82365-DF compatible.

The power management unit provides 3.3V or 5.0V PC Card power supply and 3.3V, 5.0V or 12V PC Card programming voltage. Due to the short circuit and thermal protection of the power management unit no external fuses are needed on the module.

The TPMC871 provides full ExCA register implementation of one 16 bit PC Card compatible with PCMCIA 2.1/JEIDA 4.2 standards. Both memory and I/O cards are supported. Up to five memory windows and up to two I/O windows are available for PC Card 16 accesses. For 32 bit Cardbus cards two memory windows and two I/O windows are supported by the controller. Cardbus card status information can be accessed in five Cardbus socket registers which can be mapped in the host memory space.

For First Time Users the Engineering Documentation TPMC871-ED is recommended. The Engineering Documentation includes TPMC871-DOC, schematics and data sheets.
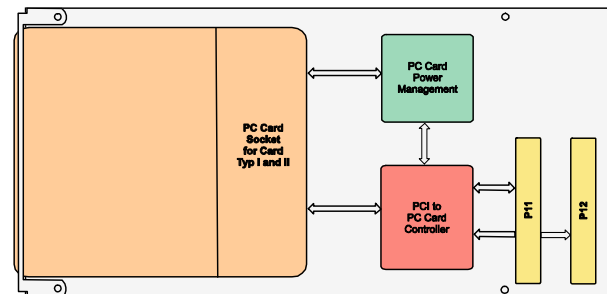
Software Support:

o Software Support (TPMC871-SW-xx) for different operating systems is available.

o The TPMC871 is directly supported from WindowsXP/2000 and Linux.

Technical Information

❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
❍ PCI 2.1 compliant interface
❍ 3.3V and 5V PCI Signaling Voltage
❍ Board size: 149mm x 74mm
❍ 1 PC Card Slot with hot insertion and removal
❍ Supports memory and I/O cards of type I and II

Note: The PC Card assembly has a maximum component height of 5.6mm which is 0.9mm above the specified component height (4.7mm) according to IEEE1386.1

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Order Information

RoHS Compliant

TPMC871-10R   1 Socket PC Card Interface, PC Card accessible through front panel

TPMC871-11R   1 Socket PC Card Interface, PC Card not accessible through front panel

TPMC871-50R   1 Socket PC Card Interface, PC Card accessible through front panel, inserted PC Card behind front panel

None RoHS Compliant

TPMC871-10   None RoHS compliant version of TPMC871-10R

TPMC871-11   None RoHS compliant version of TPMC871-11R

TPMC871-50   None RoHS compliant version of TPMC871-50R

Documentation

TPMC871-DOC   User Manual

TPMC871-ED   Engineering Documentation, includes TPMC871-DOC

Software

TPMC871-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

For other operating systems please contact TEWS.

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TPMC872 1/2 Socket CardBus / PC Card Interface

Application Information

The TPMC872 is a standard single-width 32 bit PMC module providing one or two sockets for 16 bit PC Card or 32 bit CardBus Cards using a dual socket PC Card / CardBus controller and a power management unit. The first CardBus / PC Card socket is mounted on the component side of the PMC. This socket supports card types I and II. The second PC Card / CardBus socket is mounted on the solder side of the PMC (TPMC872-2x only), supporting card types I, II and III.

The register map of the PC Card controller is Intel 82365-DF compatible.

TPMC872-20 component side

The power management unit provides 3.3V or 5.0V PC Card / CardBus power supply and 3.3V, 5.0V or 12V PC Card / CardBus programming voltage. Due to the short circuit and thermal protection of the power management unit no external fuses are needed on the module.

The TPMC872 provides full ExCA register implementation for 16 bit PC Cards compatible with PCMCIA 2.1/JEIDA 4.2 standards. Both memory and I/O cards are supported. Up to five memory windows and up to two I/O windows are available for PC Card16 accesses. For 32 bit CardBus cards two memory windows and two I/O windows are supported by the controller. CardBus card status information can be accessed in five card bus socket registers which can be mapped in the host memory space.

TPMC872-20 solder side

Note: The PC Card assembly has a maximum component height of 5.6mm which is 0.9mm above the specified component height (4.7mm) according to IEEE1386.1. The second PC Card socket is assembled on the solder side of the PMC, requiring additional space.

The TPMC872-10, -11 and -12 have one PC Card / CardBus socket:

> -10: The inserted card is accessible through the PMC front panel.

> -11: The socket is relegated so that the inserted card is aligned with the PMC board border. It has no PMC front panel.

> -12: The socket is relegated so that the inserted card is aligned with the PMC board border. It has a PMC front panel.

The TPMC872-20, -21 and -22 have two PC Card / CardBus sockets:

> -20: The inserted card in the first socket is accessible through the front panel. The second socket on the solder side of the PMC is relegated so that the inserted card is located behind the PMC board border.
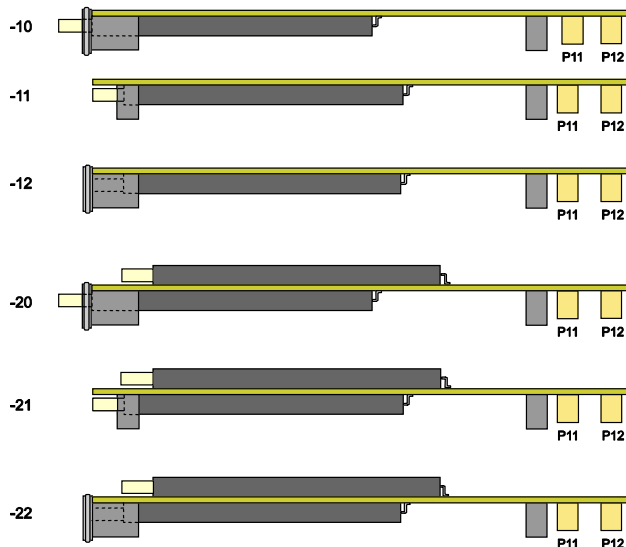
> -21: The first socket is relegated so that the inserted card is aligned with the PMC board border. The second socket on the solder side of the PMC is relegated so that the inserted card is located behind the PMC board border. It has no PMC front panel.

> -22: The first socket is relegated so that the inserted card is aligned with the PMC board border. The second socket on the solder side of the PMC is relegated so that the inserted card is located behind the PMC board border. It has a PMC front panel.

For a detailed side view on the placement of the PC Card / CardBus sockets, see the figure below:
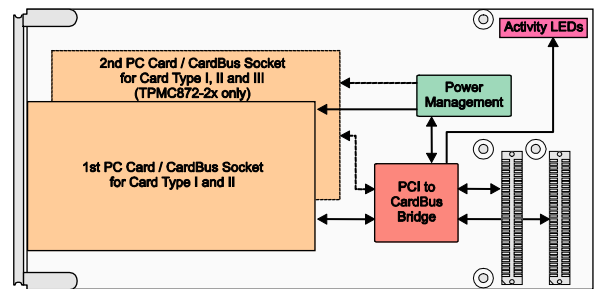

For First Time Users the Engineering Documentation TPMC872-ED is recommended. The Engineering Documentation includes TPMC872-DOC, schematics and data sheets.

Driver Support:

o Software Support (TPMC872-SW-xx) for different operating systems is available.

o The TPMC872 is directly supported from WindowsXP/2000 and Linux.

Technical Information

❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1

❍ PCI 2.2 compliant interface

❍ Board size: 149 mm x 74 mm

❍ Up to two PC Card / CardBus Sockets with hot insertion and removal, supports memory and I/O cards of type I, II and III (second socket only).

❍ Operating temperature: -40°C to +85°C

Order Information

None RoHS Compliant

TPMC872-10	One Socket PC Card Interface, inserted PC Card accessible through PMC front panel
TPMC872-11	One Socket PC Card Interface, inserted PC Card aligned with PMC board border, no front panel
TPMC872-12	One Socket PC Card Interface, inserted PC Card aligned with PMC board border, with PMC front panel
TPMC872-20	Two Socket PC Card Interface, inserted PC Card in first socket accessible through PMC front panel. Second socket is relegated so that the inserted card is located behind the PMC board border.
TPMC872-21	Two Socket PC Card Interface, inserted card in first socket is aligned with the PMC board border. Second socket is relegated so that the inserted card is located behind the PMC board border, no PMC front panel.
TPMC872-22	Two Socket PC Card Interface, inserted card in first socket is aligned with the PMC board border. Second socket is relegated so that the inserted card is located behind the PMC board border, with PMC front panel.

Documentation

TPMC872-DOC	User Manual
TPMC872-ED	Engineering Documentation, includes TPMC872-DOC

Software

TPMC872-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)

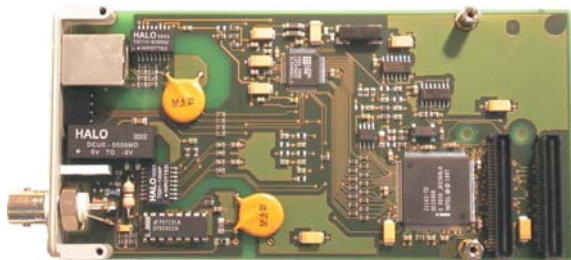For other operating systems please contact TEWS.

TPMC880   10/100Mb/s Ethernet Adapter

Application Information

The TPMC880 is a PCI Mezzanine Card (PMC) compatible module providing a single channel Ethernet Interface and is available in three different configurations: The TPMC880-11 supports a complete Ethernet 10/100Base-T interface, the TPMC880-12 provides an Ethernet 10Base2 ("Cheapernet") interface and the TPMC880-10 combines both interface types (10/100Base-T and 10Base2) on one board.

All modules use an Intel™ 21143-TD Ethernet controller which supports 10 and 100Mb/s transmission rates for half and full duplex operation. The TPMC880-10/11 is capable of performing an auto negotiation algorithm which allows both link-partners to find out the best link-parameters by themselves. All TPMC880 are widely user configurable via configuration and status register access over the PCI-bus. All modules have front panel mounted LED's to indicate various network activities.

The TPMC880-11 provides a 10/100 Mb/s network connection via an RJ-45 connector. A LXT970A device supports all physical functions on the Twisted-Pair transmission line and is fully IEEE802.3 compliant. The twisted-pair port is galvanically isolated from the LXT970A and the Ethernet controller by an isolation module. The TPMC880-10/12 provides a 10Base2 ("Cheapernet") network connection via a BNC connector.

To guarantee overvoltage protection up to 500Vrms the BNC transmission path and the supply voltage is fed over a DC/DC converter and an isolation module to the coax transceiver, which is directly connected to the coax cable. The TPMC880-10 provides a 10Base2 and a 10/100Base-T interface on the same board.
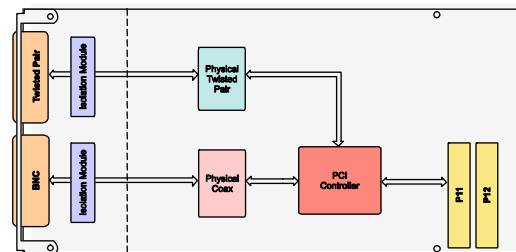
For First Time Users the Engineering Documentation TPMC880-ED is recommended. The Engineering Documentation includes TPMC880-DOC, schematics and data sheets.

Driver Support:

o   Windows XP/2000 Software support: Use standard Windows XP/2000 driver.

o   For other operating systems please contact TEWS.

Technical Information

❍   Standard single-width 32 bit PMC module conforming to IEEE P1386.1
❍   PCI 2.1 compliant interface
❍   3.3V and 5V PCI Signaling Voltage
❍   Board size: 149mm x 74mm
❍   IEEE802.3 compliant LAN interface
❍   Support of front panel status LED's
❍   10/100Base-T or/and 10Base2 interface available
❍   Half or full-duplex operation
❍   Controller supports DMA-cycles as a bus master
❍   Network ports galvanically isolated up to 500Vrms

Order Information

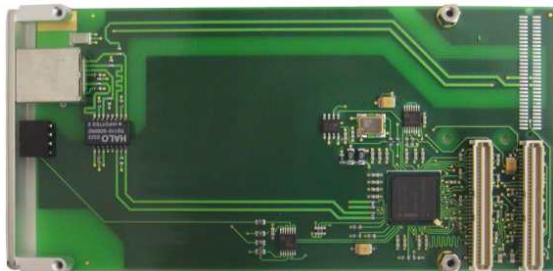|	
TPMC880-10	10/100Base-T and 10Base2 Ethernet Interface (None RoHS compliant)
TPMC880-11	Single 10/100Base-T Ethernet Interface(None RoHS compliant)
TPMC880-12	Single 10Base2 Ethernet Interface(None RoHS compliant)
TPMC880-DOC	User Manual
TPMC880-ED	Engineering Documentation, includes TPMC880-DOC

TPMC881   Single Channel 10/100Mbit/s Ethernet

Application Information

The TPMC881 is a PCI Mezzanine Card (PMC) compatible module providing a single channel Ethernet 10BASE-T/100BASE-TX interface.

An Intel™ 82551ER/82551IT Ethernet Controller is used, which supports 10 and 100Mbit/s transmission rates for half and full duplex operation. The TPMC881-10x is capable of performing an auto negotiation algorithm which allows both link-partners to find out the best link-parameters by themselves. The TPMC881 is widely user configurable via configuration and status register access over the PCI bus. Front panel mounted LEDs indicate various network activities.

The TPMC881-10x provides a 10/100Mbit/s network connection via a front panel RJ45 connector, TPMC881-11x provides rear panel I/O via P14. The ports are galvanically isolated from the Ethernet Controller.
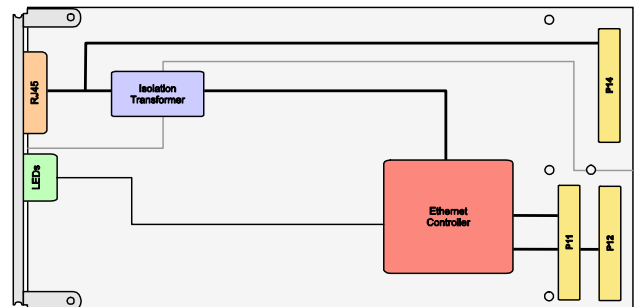

For First Time Users the Engineering Documentation TPMC881-ED is recommended. The Engineering Documentation includes TPMC881-DOC, schematics and data sheets.

Software Support:

o   The TPMC881 is directly supported from Linux, QNX6 (Neutrino) and LynxOS.

o   Software support for Windows XP/2000/NT4.0 is available from Intel at www.intel.com/design/network/products/ethernet/linecard_ec.htm.

o   For other operating systems please contact TEWS.

Technical Information

❍   Standard single-width 32 bit PMC module conforming to IEEE P1386.1
❍   PCI 2.1 compliant interface
❍   3.3V and 5V PCI Signaling Voltage
❍   Board size: 147 mm x 74 mm
❍   IEEE802.3 compliant LAN interface
❍   Support of front panel status LEDs
❍   10BASE-T/100BASE-TX interface available
❍   Half or full-duplex operation
❍   3 Kbyte Transmit and Receive FIFOs
❍   Controller supports DMA cycles as a bus master
❍   Temperature range: 0°C to +85°C (-10x / -11x)
     -40°C to +85°C (-10x-ET / -11x-ET)

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Order Information

RoHS Compliant

TPMC881-10R	Single 10BASE-T/100BASE-TX Ethernet Interface Front Panel I/O
TPMC881-10R-ET	Single 10BASE-T/100BASE-TX Ethernet Interface Extended Temperature Range Front Panel I/O
TPMC881-11R	Single 10BASE-T/100BASE-TX Ethernet Interface P14 I/O
TPMC881-11R-ET	Single 10BASE-T/100BASE-TX Ethernet Interface Extended Temperature Range P14 I/O

None RoHS Compliant

TPMC881-10	None RoHS compliant version of TPMC881-10R
TPMC881-10-ET	None RoHS compliant version of TPMC881-10R-ET
TPMC881-11	None RoHS compliant version of TPMC881-11R
TPMC881-11-ET	None RoHS compliant version of TPMC881-11R-ET

Documentation

TPMC881-DOC	User Manual
TPMC881-ED	Engineering Documentation, includes TPMC881-DOC

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TPMC882   Four Channel 10/100Mbit/s Ethernet

Application Information

The TPMC882 is a PCI Mezzanine Card (PMC) compatible module providing a four channel Ethernet 10BASE-T/100BASE-TX interface.

A transparent 32 bit / 66 MHz PCI-to-PCI Bridge provides access to the four Intel™ 82551IT Ethernet Controllers, which support 10 and 100Mbit/s transmission rates for half and full duplex operation. Each channel of the TPMC882 is capable of performing an auto negotiation algorithm which allows both link-partners to find out the best link-parameters by themselves. The TPMC882 is widely user configurable via configuration and status register access over the PCI bus.

The TPMC882-10 provides four 10/100Mbit/s network connections via front panel RJ45 connectors. The TPMC882-11 routes all four Ethernet ports to the back I/O P14 connector. The ports are galvanically isolated from the Ethernet Controller.
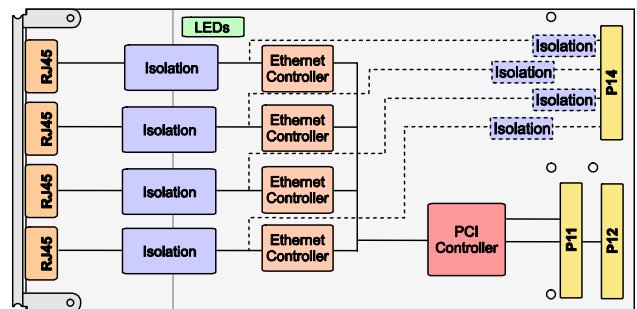

TPMC882-10

For First Time Users the Engineering Documentation TPMC882-ED is recommended. The Engineering Documentation includes TPMC882-DOC, schematics and data sheets.

Driver Support:

o   The TPMC882 is directly supported from Linux, QNX6 (Neutrino) and LynxOS.

o   Software Support for Windows XP/2000/NT4.0 is available from Intel at www.intel.com

o   For other operating systems please contact TEWS.

Technical Information

- ❍ Standard single-width 32 bit / 66 MHz PMC module conforming to IEEE P1386.1
- ❍ PCI 2.1 compliant interface
- ❍ 3.3V and 5V PCI Signaling Voltage
- ❍ Board size: 147 mm x 74 mm
- ❍ IEEE802.3 compliant LAN interface
- ❍ 10BASE-T/100BASE-TX interface available
- ❍ Half or full-duplex operation
- ❍ 3 Kbytes Transmit and Receive FIFOs per Channel
- ❍ Controllers support DMA cycles as bus masters
- ❍ Temperature range: -40°C to +85°C

Order Information

RoHS Compliant

TPMC882-10R	Four Channel 10BASE-T/100BASE-TX Ethernet Interface Front Panel I/O, Extended Temperature Range
TPMC882-11R	Four Channel 10BASE-T/100BASE-TX Ethernet Interface Back I/O, Extended Temperature Range

None RoHS Compliant

TPMC882-10	None RoHS compliant version of TPMC882-10R
TPMC882-11	None RoHS compliant version of TPMC882-11R

Documentation

TPMC882-DOC	User Manual
TPMC882-ED	Engineering Documentation, includes TPMC882-DOC

Related Products

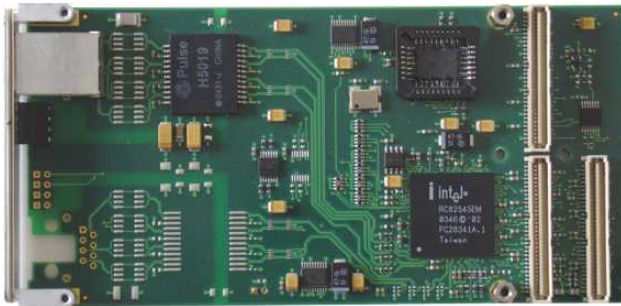|	
TPIM004	PIM I/O Module for Quad Ethernet PMC

The Embedded I/O Company

TPMC883   Single Channel 10/100/1000 Mbit/s Ethernet

Application Information

The TPMC883 is a PCI Mezzanine Card (PMC) compatible module providing a single channel Gigabit Ethernet 10 / 100 / 1000BASE-TX interface.

For highest data rates, the TPMC883 has a 64 bit, 133/100/66 MHz PCI bus interface and is capable of full speed bus-master DMA operations utilizing maximum PCI bandwidth.

An Intel™ 82545EM Ethernet Controller (82545GM for RoHS compliant product) is used, which supports 10, 100 and 1000 Mbit/s transmission rates for half and full duplex operation. The TPMC883 is capable of performing an auto negotiation algorithm which allows both link-partners to find out the best link-parameters by themselves. The TPMC883 is widely user configurable via configuration and status register access over the PCI bus. Front panel mounted LEDs indicate various network activities.

The TPMC883-10 provides a 10/100/1000 Mbit/s network connection via a front panel RJ45 connector. The port is galvanically isolated from the Ethernet Controller.
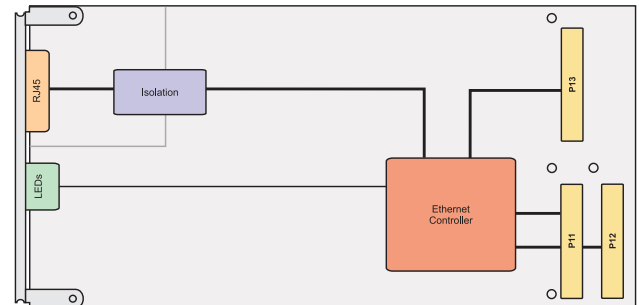
For First Time Users the Engineering Documentation TPMC883-ED is recommended. The Engineering Documentation includes TPMC883-DOC, schematics and data sheets.

Driver Support:

o   Software Support Windows XP/2000/NT4.0 and several other operating systems is available from Intel at: http://downloadfinder.intel.com

o   For other operating systems please contact TEWS.

Technical Information

❍   Standard single-width 64 bit PMC module conforming to IEEE P1386.1
❍   PCI 2.2 (64 bit / 66 MHZ) and PCI-X 1.0a (64 bit / 133 MHz) compliant interface
❍   3.3V and 5V PCI Signaling Voltage
❍   Board size: 147 mm x 74 mm
❍   IEEE802.3 compliant Gigabit LAN interface
❍   Support of front panel status LEDs
❍   10BASE-T/100BASE-TX 1000BASE-T interface available
❍   Half or full-duplex operation
❍   64 Kbyte Transmit and Receive FIFOs
❍   Controller supports DMA cycles as a bus master
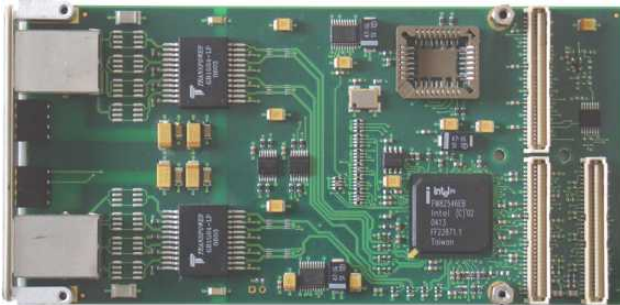❍   Operating temperature range: 0°C to +70°C

Order Information

TPMC883-10R	Single 10BASE-T / 100BASE-TX / 1000BASE-TX Ethernet Interface RJ45 Front Panel I/O based on Intel 82545EM Controller
TPMC883-10	None RoHS compliant version of TPMC883-10R
TPMC883-DOC	User Manual
TPMC883-ED	Engineering Documentation, includes TPMC883-DOC

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TPMC884   Dual Channel 10/100/1000 Mbit/s Ethernet

Application Information

The TPMC884 is a PCI Mezzanine Card (PMC) compatible module providing a dual channel Gigabit Ethernet 10 / 100 / 1000BASE-TX interface.

For highest data rates, the TPMC884 has a 64 bit, 133/100/66 MHz PCI bus interface and is capable of full speed bus-master DMA operations utilizing maximum PCI bandwidth.

An Intel™ 82546EB Ethernet Controller (Intel™ 82546GB for ROHS compliant version) is used, which supports 10, 100 and 1000 Mbit/s transmission rates for half and full duplex operation. The TPMC884 is capable of performing an auto negotiation algorithm which allows both link-partners to find out the best link-parameters by themselves. The TPMC884 is widely user configurable via configuration and status register access over the PCI bus. Front panel mounted LEDs indicate various network activities.

The TPMC884-10 provides 10/100/1000 Mbit/s network connection via two front panel RJ45 connectors. The ports are galvanically isolated from the Ethernet Controller.
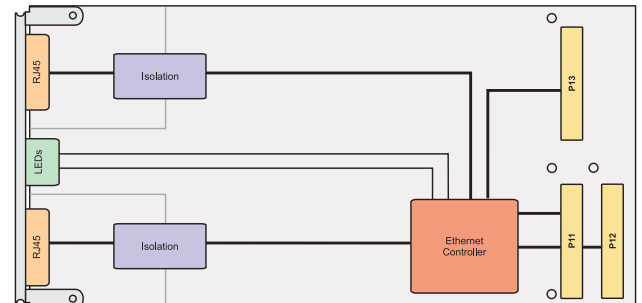
For First Time Users the Engineering Documentation TPMC884-ED is recommended. The Engineering Documentation includes TPMC884-DOC, schematics and data sheets.

Driver Support:

o Software Support for Windows XP/2000/NT4.0 and several other operating systems is available from Intel at: http://downloadfinder.intel.com/

o For other operating systems please contact TEWS.

Technical Information

❍ Standard single-width 64 bit PMC module conforming to IEEE P1386.1
❍ PCI 2.2 (64 bit / 66 MHZ) and PCI-X 1.0a (64 bit / 133 MHz) compliant interface
❍ 3.3V and 5V PCI Signaling Voltage
❍ Board size: 147 mm x 74 mm
❍ Two IEEE802.3 compliant Gigabit LAN interfaces
❍ Support of front panel status LEDs for each channel
❍ 10BASE-T/100BASE-TX 1000BASE-T interface available
❍ Half or full-duplex operation
❍ 64 Kbyte Transmit and Receive FIFOs
❍ Controller supports DMA cycles as a bus master
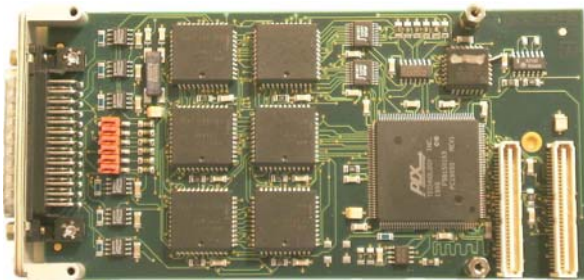❍ Operating temperature range: 0°C to +55°C

Order Information

TPMC884-10R	Dual 10BASE-T / 100BASE-TX / 1000BASE-TX Ethernet Interface RJ45 Front Panel I/O based on Intel 82546EB controller
TPMC884-10	None RoHS compliant version of TPMC884-10R
TPMC884-DOC	User Manual
TPMC884-ED	Engineering Documentation, includes TPMC884-DOC

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TPMC901   6/4/2 Independent Channels Extended CAN Bus

Application Information

The TPMC901 is a PCI Mezzanine Card (PMC) compatible module. The TPMC901-10 provides six complete CAN bus interfaces using six Intel 82527 CAN controller. Additionally to the standard data and remote frame, all channels support the extended data and remote frame according to the CAN specification 2.0 part A and B (standard 11 bit identifier and extended 29 bit identifier). All channels have the capability to transmit, receive and perform message filtering on extended and standard messages.
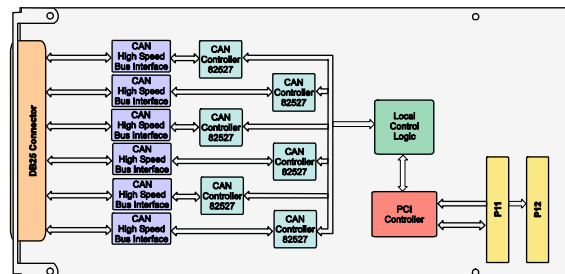

Each channel supports CAN High Speed according to ISO11898 as the physical interface. The bus line termination is selectable by a jumper separate for each bus line pair. The data transfer rates of up to 1 Mbps are supported for a bus line length of 40 m. The TPMC901-11 supports only four CAN bus channels and the TPMC901-12 has two CAN bus channels.

For First Time Users the Engineering Documentation TPMC901-ED is recommended. The Engineering Documentation includes TPMC901-DOC, schematics and data sheets.

Software Support (TDRV011-SW-xx) for different operating systems is available.

Technical Information

- ❍ Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- ❍ PCI 2.1 compliant interface
- ❍ Board size: 149 mm x 74 mm
- ❍ CAN bus interface based on Intel 82527 chip
- ❍ Support CAN specification 2.0 part A and B (standard and extended data frames)
- ❍ Programmable global mask
- ❍ 15 message objects of 8 byte data length
- ❍ Powerful error handling
- ❍ Programmable transfer rates
- ❍ Physical interface CAN High Speed (according to ISO 11 898) per channel
- ❍ Maximum transfer rate 1 Mbit/s (bus length up to 40 m)

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Order Information

RoHS Compliant
TPMC901-10R   6 Independent CAN Bus Channels
TPMC901-11R   4 Independent CAN Bus Channels
TPMC901-12R   2 Independent CAN Bus Channels

None RoHS Compliant
TPMC901-10   None RoHS compliant version of TPMC901-10R
TPMC901-11   None RoHS compliant version of TPMC901-11R
TPMC901-12   None RoHS compliant version of TPMC901-12R

Documentation
TPMC901-DOC   User Manual
TPMC901-ED   Engineering Documentation, includes TPMC901-DOC

Software
TDRV011-SW-25   Integrity Software Support
TDRV011-SW-42   VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TDRV011-SW-65   Windows XP/XPE/2000 Software Support
TDRV011-SW-72   LynxOS Software Support
TDRV011-SW-82   LiNUX Software Support
TDRV011-SW-95   QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products
TA302   Cable Kit for modules with DB25 male connector

TPMC917   4 Channel Serial Interface RS232 with 4 Mbyte NV-SRAM
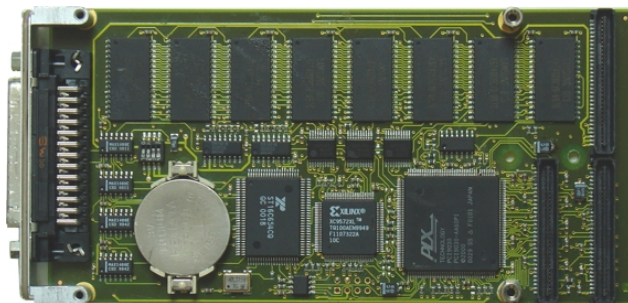
Application Information

The TPMC917 is a standard single-width 32 bit PMC module providing 4 Mbyte SRAM with battery backup by an on board lithium cell for all SRAM devises and four ESD protected RS232 channels (TPMC917-10 only).

The 4 Mbyte NV-SRAM is organized in two banks, each of them provides 512k x 32 bit memory. During normal operation (standard 5V supply applied to the SRAM) the capacity of the lithium cell is monitored every 24 hours by the battery monitor device and an interrupt can be generated, if the battery voltage is too low. The monitor device switches the power supply of the SRAM from the standard 5V to the battery if the 5V supply drops below the threshold level of the battery monitor device. Any active access to the SRAM at this point is executed correctly within 1.5µs. After this time any further accesses to the SRAM are not possible. A miniature DIP switch allows the selection of the battery backup source either from the on board lithium cell or from an external battery via the P14 I/O connector.

The TPMC917-10 provides four RS232 channels. Each channel has a programmable baud rate up to 115.2 Kbaud. The 4 channel UART16C654 provides 64 byte transmit FIFO and 64 byte receive FIFO for each channel to significantly reduce the overhead required to provide data to and get data from the transmitter and receiver. The FIFO trigger levels are programmable. The channels are ESD protected up to +/-15kV according to the human body model and IEC1000-4-2.
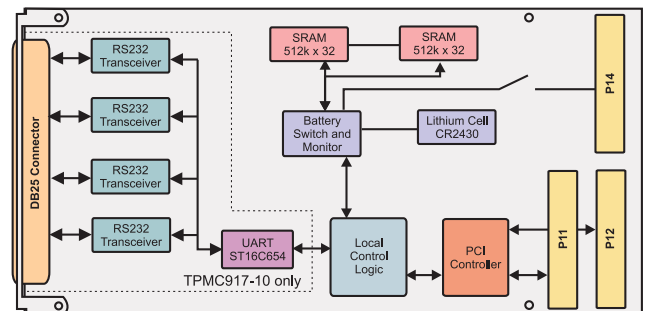
For applications which do not need the UARTs of the TPMC917-10, the TPMC917-20 provides 4 MByte NV-SRAM and has no UARTs.

The TPMC917-21 has a reduced memory size. It provides 2 MByte NV-SRAM and has no UARTs.

Technical Information

- Standard single-width 32 bit PMC module conforming to IEEE P1386.1
- PCI 2.1 compliant interface
- 3.3V and 5V PCI Signaling Voltage
- Board size: 149 mm x 74 mm
- 4 Mbyte NV-SRAM (TPMC937-10/-20) or
  2 Mbyte NV-SRAM (TPMC917-21)
  with battery backup by on board lithium cell
  - Battery capacity is monitored every 24 hours
  - Interrupt can be generated to control battery voltage
- 4 channel asynchronous serial RS232 interface, ESD protected (TPMC917-10 only):
  - 64 byte transmit FIFO per channel, 64 byte receive FIFO per channel
  - Programmable baud rates up to 115.2 Kbaud
- Operating temperature: 0°C to +70°C

For First Time Users the Engineering Documentation TPMC917-ED is recommended. The Engineering Documentation includes TPMC917-DOC, schematics and data sheets.

Software Support (TPMC917-SW-xx) for different operating systems is available.

Order Information

RoHS Compliant

TPMC917-10R	4 MByte NV-SRAM with Battery Backup and 4 Channel Serial RS232
TPMC917-20R	4 MByte NV-SRAM with Battery Backup
TPMC917-21R	2 MByte NV-SRAM with Battery Backup

None RoHS Compliant

TPMC917-10	None RoHS compliant version of TPMC917-10R
TPMC917-20	None RoHS compliant version of TPMC917-20R
TPMC917-21	None RoHS compliant version of TPMC917-21R

Documentation

TPMC917-DOC	User Manual
TPMC917-ED	Engineering Documentation, includes TPMC917-DOC

Software

TPMC917-SW-25	Integrity Software Support
TPMC917-SW-42	VxWorks Software Support (Legacy and VxBus-Enabled Software Support)
TPMC917-SW-65	Windows XP/XPE/2000 Software Support
TPMC917-SW-72	LynxOS Software Support
TPMC917-SW-82	LiNUX Software Support
TPMC917-SW-95	QNX 6 Software Support

For other operating systems please contact TEWS.

Related Products

TA303	Cable Kit for modules with DB25 connector
TPIM001	PIM I/O Module with HD50 SCSI-2 type connector